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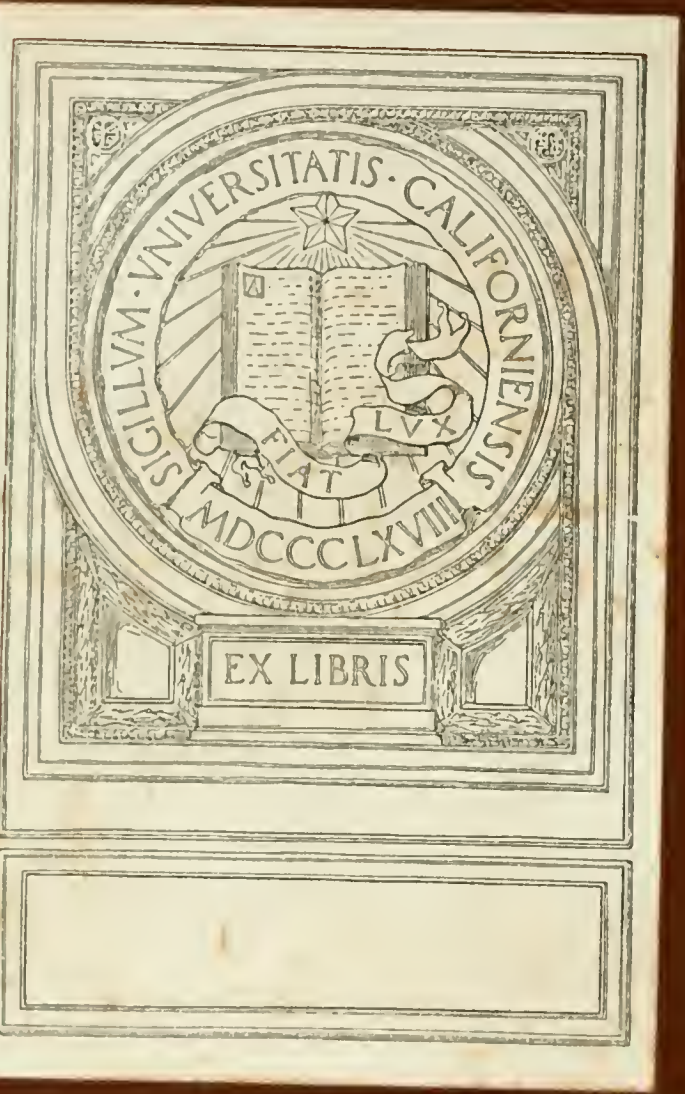

MISSOURI AS IT IS IN 1867.

COMMENDATIONS.

INDORSEMENT BY THE HEADS OF DEPARTMENTS.

We take pleasure in recommending "Parker's Illustrated Historical Gazetteer" to all who desire information in regard to Missouri.

From personal examination of the manuscript, and from the indorsement of those who are familiar with the different portions of the State therein represented, we feel assured that it is authentic and reliable, and believe that a work of this kind, prepared with the care and attention the author has given this, will supply the increasing demand for a Complete Gazetteer of Missouri, embracing, as it does, a history of the Territory and State from its first actual settlement (upwards of a century and a half ago) to the present time, and a full description of the State, at large, and by counties, showing its topography, geological formations, mineral wealth, agricultural resources, and commercial advantages, and the most important statistics of every portion of the State, together with many thrilling incidents of the pioneer history of Missouri. By the publication of this Gazetteer the author will accomplish a work worthy of the approval and support of the people of Missouri.

[The above was signed by the former Governor, Secretary of State, State Treasurer, State Auditor, Clerk of Supreme Court, Superintendent of Common Schools, President Board of Public Works, Secretary of the Senate, and Attorney-General.]

INDORSEMENT BY THE SENATE.

By the Senate the following complimentary resolution, indorsing this work, was unanimously passed:

"*Resolved*, That we highly approve of and appreciate the labors of Mr. N. H. Parker in the preparation of his Illustrated Historical State Gazetteer, and from the care he has taken to collect reliable information and authentic accounts of the many interesting incidents in our early history, and his faithful exposition of the social and moral, as well as the physical, commercial, and industrial resources of the State, we cordially commend this work to the patronage of all those desiring information respecting the past history and present condition of Missouri; and that, by the publication of his Gazetteer, the author will contribute much to the development of the various resources of the State, and will merit the support of every one interested in Missouri."

COMMENDATIONS BY THE PRESS.

We have had the pleasure of spending an hour at the studio of the author of this standard work, and have examined a portion of the manuscripts and illustrations. The one hundred and fifteen counties in the State are represented, and the history of each county is a book complete in itself, giving full descriptions of the early settlement, physical features, agricultural, commercial, and business statistics of each city and town in the county. Some of the principal points of interest and natural curiosities throughout the State have been drawn and engraved, expressly for this work. From our personal observation, we can unqualifiedly pronounce the forthcoming work a most complete book of Missouri. It already has the indorsement of the most prominent men in the State, who have also examined the MSS. A work of this character has long been wanted, and the author merits the support of the entire people of the State.

When the Illustrated State Gazetteer is published, we shall take an early opportunity of reviewing its contents, and setting forth more fully the merits of the work.—*Missouri Republican*, St. Louis.

We have also had the pleasure of looking over some of the manuscripts of this forthcoming work, and have heretofore had occasion to speak of it commendatorily. We can do no less than indorse every word the "Republican" says of it. It is well worthy the praise and patronage of every Missourian.—*Examiner*, Jefferson City, Mo.

From what we have seen of the manuscript and illustrations, and from the indorsement it has received from some of the most intelligent men in the State and those most familiar with Missouri, we venture to say that it will be just the work needed—a complete and accurate Gazetteer of Missouri. This book will embrace all information of interest to the citizens of the State, and those seeking homes in the West, including Missouri's early history, its geological and topographical characteristics, and the mineral, manufacturing, mechanical, commercial, and railroad interests, advantages, and statistics of each county. We are under the impression that the information is full, late, and reliable, for it has been collected by the author in person. The illustrations are undoubtedly accurate and life-like. In a word, it promises to be the best work of the kind yet published in any portion of the great West, and we bespeak for it, in advance, the encouragement of the public.—*Democrat*, St. Louis.

We have examined, with much pleasure, a portion of the manuscript, and a large number of handsomely-executed engravings, for an Illustrated Gazetteer of the State. This noble and useful work is being prosecuted by Mr. N. H. Parker. From the energy and ability of this gentleman, we cannot doubt that he will be able to produce a book that will be of the utmost value, not only to citizens of Missouri, but to all who are seeking homes in our borders.

A work of this kind is greatly needed in Missouri, and we have no reason to doubt that the author will present to the public a faithful and reliable Gazetteer of the State.—*Examiner*, Jefferson City.

It will embrace a full description of the State of "Missouri *as it is*," in every particular, and will be a complete guide to every man who feels an interest in, or wishes to travel through, that State. The interests of Missouri and Illinois are in some measure identified, and this book should be in the hands of every resident in either State.—*Herald*, Wilmington, Ill.

This work will be of universal interest. Every individual in every city, town, and village in the State will be eager to have it; because every locality in the State has a place upon its pages, and many of them are beautifully illustrated. . . . We have seen some of the manuscript, and can say, without hesitation, that it promises to be the best work of the kind ever published for any part of the West, and it will be an honor to the State and its compiler.—*Ironton Furnace*, Ironton, Mo.

We shall have a book of great value, especially to the business men of Missouri.—*Visitor*, Waverly.

This gentleman deserves the thanks and encouragement of the people throughout the State, for the energy and thoroughness with which he is prosecuting his work.—*West*, St. Joseph, Mo.

Any one can see at a glance that this work will prove of immense advantage to each county, and give it character abroad.—*Mirror*, Springfield, Mo.

This volume will contain a description of St. Joseph and the surrounding country, its business and commercial advantages, incidents in its early settlement, etc., etc. We have been shown the engraving of St. Joseph, designed for it. It is decidedly one of the best executed engravings we have ever seen, and correctly represents the city as it appears from the stand-point where sketched. —*Gazette*, St. Joseph, Mo.

This work has long been wanted, and will be much sought after. The sketch of St. Joseph is perfect; the smallest houses are visible, and can be recognized at a glance. Nothing is missing, from the largest house down to the smallest. This work should be in the hands of every one who wishes to become conversant with the resources of Missouri.—*Journal*, St. Joseph, Mo.

This will be an important work, and should be in the hands of every citizen in the State. It will not only be an interesting work to read—the early times of Missouri equaling those of any other State in the Union in wild adventure and romantic interest—but will contain a mint of knowledge which should be known by every one regarding their own State.—*Herald*, Neosho, Mo.

The plan of the author has been to visit every county in the State, and from the lips of its oldest citizens, from official sources, and personal observation, to embody every matter of interest—historical, agricultural, and commercial. We have seen the notes on Kansas City, and if the book is made up with such minuteness and fidelity as that of Kansas City, it will be the most important history of Missouri ever published.—*Journal of Commerce*, Kansas City, Mo.

The author is able to send forth a book that will speak alike in eloquent tones, to the mind and eye, of the true greatness of our State now, while it will lay the foundation for a future development and population, which can be better imagined than described.—*Times*, Glasgow, Mo.

The volume will be beautifully illustrated with engravings of towns (among which will be Brunswick), public buildings, landscape scenery, etc., drawn and engraved expressly for this work. It will be a valuable book for reference to all who take an interest in this great State.—*Press*, Brunswick, Mo.

This book will contain the latest and most reliable information in regard to our noble State, as well as authentic accounts of its early settlement.—*The Central City*, Brunswick, Mo.

We have no hesitancy in pronouncing it one of the most complete, comprehensive works of the kind ever published for any Western State or Territory. At this time the great want of the State is an influx of intelligent, energetic Northern people, who shall infuse new life and energy into the now almost depopulated portions of our State. This want has been expressed by our noble Governor in his inaugural message, by the best men in our Legislature and State Convention, and by the press all over the State. In all the Union "as it was," there is no other State that possesses, to the same extent, the elements of wealth, of greatness, and independence as does Missouri; but the fact avails us nothing unless these latent resources are developed. To insure their development we must make these facts known to the rest of the world—to the overcrowded East, and the manufacturing and mining districts of the Old World, and a tide of immigration will flow into "free Missouri," such as even the auriferous districts might covet. The reasons are self-evident; almost every mineral of any economical value exists in working quantities in this State, and of some of the most useful and profitable we have beds of unparalleled extent. The more valuable beds of iron, lead, copper, and marble are in districts penetrated by railroads already completed, or whose completion at an early day is provided for; our public improvements, the cause of education and everything that tends towards the advancement of the best interests of the State, are fostered and encouraged by the Executive and Legislature.

Let these facts be properly and fully set forth before the world, as they will be in the forthcoming work—let a correct view of "Missouri as it is in 1867"—redeemed, disenthralled—be published and widely circulated, and thousands of intelligent and industrious settlers will make their homes with us, bringing with them millions of capital, and energy and principles that shall inaugurate the new era in Missouri—that shall build up colleges and school-houses, manufactories, towns, and villages, and "make the wilderness to blossom as the rose."

We heartily congratulate the people of the State, that the work of producing this most desirable result, by the advocacy of the claims of our State, has been undertaken at this time, by one eminently competent to do the subject justice. Mr. Parker has done and is doing the State a noble work, unaided by public or private enterprise, and it is due him, and manifestly to the interest of the State, that his efforts should be sanctioned by the State, as far as consistent.—*St. Louis Dispatch*.

MISSOURI AS IT IS IN 1867.

MISSOURI

AS IT IS IN 1867:

AN

Illustrated Historical Gazetteer of Missouri,

EMBRACING THE

Geography, History, Resources and Prospects; the Mineralogical and Agricultural Wealth and Advantages; the Population, Business Statistics, Public Institutions, etc. of each County in the State.

THE NEW CONSTITUTION, THE EMANCIPATION ORDINANCE,

AND IMPORTANT FACTS CONCERNING "FREE MISSOURI."

AN ORIGINAL ARTICLE ON GEOLOGY, MINERALOGY, SOILS, ETC.

BY PROF. G. C. SWALLOW.

Also Special Articles on Climate, Grape Culture, Hemp, and Tobacco.

Illustrated with Numerous Original Engravings.

BY

NATHAN H. PARKER,

AUTHOR OF "IOWA AS IT IS;" HANDBOOKS OF MINNESOTA, IOWA, KANSAS AND NEBRASKA; SECTIONAL AND GEOLOGICAL MAPS OF IOWA, MISSOURI, ETC.

PHILADELPHIA:

J. B. LIPPINCOTT & CO.

1867.

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Entered, according to Act of Congress, in the year 1867, by

NATHAN H. PARKER,

In the Clerk's Office of the District Court of the United States for the Eastern District of Missouri.

PREFACE.

THE present times are the beginning of a fresh chapter in the history of Missouri. The tide of intelligent, industrious, and earnest men, the rapid inauguration of public improvements and private enterprises upon a scale heretofore unknown, the employment of skill and capital in mining and manufacturing, the transformation of thousands of acres of the virgin soil to cultivated farms, and the rapidly growing villages and creation of new business centers, give us every reason to date the opening of the new epoch in the development of the resources of Missouri from the close of the war.

After long years of struggle, the State stands to-day redeemed from slavery and oppression, and, as will be seen by reference to the New Constitution herein, she has taken her position in the front ranks of the Free States, and now "guarantees the property, protects the rights, and yields the largest liberty to all her citizens."

After having thoroughly acquainted himself with the character of this State, by extensive tours and correspondence, during the past ten years, the writer has pre-

pared the following pages, not to produce a pleasing and salable book, but to supply the demand for full and reliable information about this noble State. Portions of the information, especially the descriptive and historical notes, were collected before the war. After the smoke of our battles had cleared away, and the New Era fairly dawned upon the State by the adoption of the New Constitution, it was decided to complete and publish this work without unnecessary delay. Missouri suffered more from the effects of the war than any other Northern State, and the consequent disarrangement of traveling facilities, the removal or destruction of county records, the disruption and disorganization of religious and educational societies, rendered the task of collecting reliable information neither pleasant nor satisfactory.

The most careful observer and candid writer cannot, in making tours through a State, give as full and reliable details respecting many important matters as the reader would desire in a standard work; hence the author has not relied solely upon his personal observations, but sought, from the best available authority in every department, the testimony and experience of practical men. Special articles have been prepared for this work on Geology, Mineralogy, Grape Culture, Wine-making, Hemp Culture, Mineral and Agricultural Resources, Timber, Trees, etc., by persons who were believed to be most competent authority in those several departments.

It has been the aim of the writer to address himself to the general intelligence of the educated, observing, and thinking men—to state facts as to the location and character of our various soils and minerals—to describe the resources and advantages of the State, rather than to indulge in theoretical speculations.

Of course it is impossible for perfect accuracy to be obtained in a work of this description; for, while the author has left one portion of the State with correct statistics to that date, and is visiting other sections, new towns spring up, and older ones grow apace. For instance, Chillicothe is reported to have built 300 and Mexico 200 new dwellings and business houses within the past twelve months. The same is true of other portions of the State. Virgil City is so new as not to be located upon any map—only four months old, and now numbers twenty dwellings, a steam saw-mill, hotel, stores, brick machines, etc., with prospects so extensive that the projectors have located the plat in two counties—partly in Cedar and Vernon Counties. Western people who build towns in this manner, who construct railroads at a rate of from three to five miles per day, do not stand still to be photographed, nor care one iota how rapidly they outstrip the statistician's estimates of their business or population. However, from the pains taken, this work is believed to contain very few errors, and none of great importance. Travelers or citizens who may notice mistakes or omis-

sions will confer a favor by reporting the same to the author, at St. Louis, by mail, that future editions may be as nearly accurate as possible.

To the press of the State, for universal courtesy and co-operation, and to those who have given encouraging notices in advance; to the several railroad companies, for traveling facilities for visiting points along their lines, and to the many citizens who have done their State good service by contributing information for this work, the author would return his grateful acknowledgments.

And here the writer feels called upon to express his gratitude to a generous public for the very liberal patronage bestowed upon his six previous publications on Western States and Territories. Imperfect as have been his labors, his motives have been appreciated, and the census statistics for the past decade indicate that published information has no unfavorable results upon the increase of the population or wealth of the West.

This work is submitted to the public *as it is*, with the promise of a better, if it is demanded. If the author has succeeded in representing "Missouri as it is in 1867"—if his task shall tend to throw a light over the immigrant's path, to direct intelligent labor and capital where there is unlimited and remunerative demands—if this work shall serve to eradicate or lessen whatever of misconception or of prejudice may have existed in the minds of strangers—if, as the fruit of his labors, the author shall

be able to place Missouri before the world in her true light, and to assign to her that lofty rank among the States which she must attain and forever hold—he will feel that he has not fallen short of the elevated goal of his ambition, and, in the consciousness of duty fulfilled, will reap a golden reward.

N. H. P.

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ILLUSTRATED HISTORICAL

GAZETTEER OF MISSOURI.

BOOK I.

HISTORICAL EPOCHS OF THE MISSISSIPPI VALLEY.

1539—De Soto discovers and crosses the Mississippi.
1542—Winter-quarters of his company, probably in Missouri, in 1541–'42.
" De Soto died, and was buried in the Mississippi, near mouth of Arkansas River.
" Louis de Moscoso succeeds De Soto. He marches to Red River, in Texas.
1543—Moscoso and his troops march through Arkansas and Missouri.
1544—De Biedma makes a report of De Soto's Expedition, to the King of Spain.
1671—The French take formal possession of the Northwest.
1673—May 13, Marquette and Joliet leave Mackinaw in search of the Mississippi.
" June 17, Marquette reaches the Mississippi at the mouth of the Wisconsin, and descended it to the mouth of the Arkansas.
1675—May 18, Marquette died.
1680—La Salle sends Hennepin and Dugay to explore the Upper Mississippi. St. Anthony's Falls named by Hennepin.
1682—Original naming of the Mississippi and Missouri Rivers, and the countries through which they flow.

1683—First settlements made by La Salle. He descends the Mississippi to its mouth.

" March 6, takes possession of the country, and named it "Louisiana."

1687—March 17, La Salle is killed by some companions.

1696—War between the Iroquois Indians and the British Colonies, against the Province of Canada.

1705—The Missouri River explored to the mouth of the Kansas River by the French.

1712—September 14, Louisiana granted to Crozart by Louis XIV.

1717—August 22, Crozart resigns Louisiana to the Crown. Transfer of the grant to "The Company of the West." First Laws.

1718—Colonists arrive. New Orleans laid out. Fort Chartres, Illinois, commenced.

1719—Renault leaves France for the Illinois country. Arrives, and dispatches 200 miners, assayers, and artisans in search of precious metals in Illinois and Missouri. Fort Chartres completed.

1720—Spanish Expedition from Santa Fe, against the French and Missouri Indians.

1724—Erection of Fort Orleans on an island in the Missouri. Destruction of the Fort.

1731—January 24, Company of the West surrender their charter to the King of France.

1762—November 3, Paris Treaty concluded. Louisiana ceded to Spain by France.

" Village du Cote (St. Charles) established.

1763—November 3, M. Laclede arrives at St. Genevieve and Fort Chartres.

1764—February 15, St. Louis founded by Pierre Laclede Liguest.

1766—August 11, Grant of land received by Pierre Laclede Liguest, upon which to build St. Louis.

1769—First occupancy by the Spaniards.

1770—Spain obtains possession of St. Louis and Upper Louisiana.

1772—Fort Chartres evacuated.

1778—General Clark takes possession of Kaskaskia. Cahokia joins the Americans.

" June 20, Pierre Laclede Liguest died near the mouth of Arkansas River, aged 54.

1780—St. Louis attacked by 1500 Indians and 140 British.

1785—Great flood of the Mississippi threatening to inundate St. Loui

1786—Julien Dubuque first visits the Upper Mississippi.

1787—New Madrid founded by Colonel G. Morgan, of New Jersey.
1788—Dubuque obtains a grant of 140,000 acres, embracing the present Dubuque, lead mines, etc.
" First boat-load of lead bought from the Indians and shipped to St. Louis by Col. Joseph Shaw, the pioneer of the lead trade.
1795—First Ferry established at St. Louis, by Captain James Piggott.
1798—Charles Dehault Delassus de Deluzière succeeds Zenon Tradeau as Lieutenant-Governor of Upper Louisiana.
1803—Louisiana ceded to the United States.
1804—March 26, "Territory of Orleans" organized; residue of country called "Territory of Louisiana."
" Lewis and Clark set out upon their Western Exploring Expedition.
1808—September 5, Major George C. Sibley established Fort Osage Government Factory on the Missouri.
" July, the "Missouri Gazette," first newspaper west of the Mississippi established at St. Louis by Joseph Charless.
1809—Governor M. Lewis committed suicide.
1811—December 11, Earthquake at New Madrid.
1812—June 4, Name changed to Territory of Missouri, and advanced to second grade of government.
" December 7, First Session of Legislature convened at St. Louis.
1814—December 5, Second Session of Legislature convened at St. Louis.
" Bank of Missouri chartered.
1815—Second weekly paper established at St. Louis.
1817—The first Steamboat (General Pike) reached St. Louis.
" John Scott, of St. Genevieve, elected first Delegate to Congress.
1818–19—Missouri Compromise passed.
1819—June 8, Exploring Expedition under Major Long left St. Louis for Mandan villages and the Yellowstone; failed.
1820—Constitutional Convention at St. Louis.
1821—Admission of Missouri into the Union.
1833—Trouble with the Mormons in Jackson County.
1838—State Capitol commenced.
" Mormon war in Caldwell County.
1852—November 20, First Locomotive west of Mississippi, on Pacific Railroad.
1859—July, Introduction of Horse Railroads in St. Louis.

GENERAL VIEW OF MISSOURI.

"Missouri, one of the largest of the United States, and the first formed wholly west of the Mississippi River, is bounded on the north by Iowa, (from which it is separated for about 30 miles on the northeast by the Des Moines River,) and on the east by the Mississippi River, which divides it from Illinois, Kentucky, and Tennessee; on the south by Arkansas, and on the west by Indian, Kansas, and Nebraska Territories; from the latter two of which it is partly separated by the Missouri River. This State lies (with the exception of a small projection between the St. François and the Mississippi Rivers, which extends to 36°,) between 36° 30′ and 40° 36′ N. lat., and between 89° 10′ and 96° W. lon., being about 285 miles in its greatest length from E. to W., and 280 in width from N. to S., including an area of 67,380 square miles, or 43,123,200 acres, only 2,938,425 of which were improved in 1850."—*Lippincott's Gazetteer of the World.*

PHYSICAL FEATURES.

In our description of the State at large we will arrange it in four distinct divisions—the Western, the Eastern, and the Northern—and afterwards describe the Southern or the "Swamp Region of Southeast Missouri;" and to give the reader a more clear and well-defined idea of its topography, we insert the following interesting extract from an article in the *Western Journal*, vol. ii. p. 292, from the pen of W. R. Singleton, Esq., Civil Engineer. He says:—

"I shall begin at the mouth of the Lamine River, in Cooper County, and, drawing a line due south to its intersection of the south boundary line, where White River leaves the State, shall establish this as the '*datum line*,' dividing the eastern from the western part of Missouri; from the fact that the two sections differ in their geographical, geological, and topographical features. To a superficial observer, scarcely any difference would appear upon the map of the State; but the topographer must, at the first glance, detect a marked and striking one.

"The **Main Ridges** first claim our attention. That ridge which, leaving the eastern branch of the Sierra Madre at Long's Peak, west of St. Vrain's Fort, in lat. 40° 20′, lon. 105° 45′, runs south until it heads the South Fork of the Platte, becomes the main divide between the waters which flow north to the Nebraska and east into the Missouri, and those which flow into the Mississippi by the Arkansas. It passes a few miles north of Bent's Fort, and from thence bears due east to the head of Little Arkansas, separates it from Smoky Hill Fork of Kansas, and passing north of Council Grove, a few miles east of which it divides itself into two branches; the northern one passing into the State of Missouri between the head waters of the Osage and the small streams which empty directly into the Missouri.

"This ridge continues until it reaches the head waters of the River Lamine, and then again divides; its main branch passing south of all the branches of the Lamine, is the divide between that stream and the waters of the Osage; and after running toward the Valley of the Missouri, there loses itself between the mouths of the Lamine and the Osage Rivers—changing its character topographically, from the former to the latter, so materially, that that part near the Osage appears to be a different ridge altogether. Those who have noticed the slopes of the hills at the mouth of the Lamine would scarcely identify them as belonging to the same ridge with the bluffs just above the Osage.

"The southern branch of the principal ridge, passing between the heads of the Osage on the east, and the streams which empty into the Arkansas, retains its character, and passing into the State of Missouri, in Jasper County, 110 miles south of the mouth of the Kansas, becomes upon the maps *the Ozark range;* which name is assumed to distinguish it from other ridges in that section. Possessing no feature whatever to characterize it as a mountain chain—for *in every essential it is different from a mountain*—this ridge, as it progresses to the east, becomes the most remarkable feature in the topography of the State. It is the dividing ridge between the waters of the Missouri on its northern slope, and those of the Mississippi on its southern, from its inception at Long's Peak to its terminus on the banks of the Mississippi. From Long's Peak to the *datum line,* this ridge is celebrated for its pampas or prairies, its long slopes, continuous directions, and the great breadth and uniformity of its summit level; from the same line to the Mississippi River, it is equally remarkable for the reverse of these features; and hence we have in this view divided the southern half of the State into two topographical departments. And while, in many particulars, the escarpment

of the ridges on the western division shows a similarity to those in the eastern, yet in all the essential qualities they differ very materially. This ridge, as it approaches the heads of the Gasconade and Current Rivers, retakes the character it had abandoned at Long's Peak, and retains it throughout the eastern section; crosses the Mississippi river at Grand Tower; is cut through by that river, also by the Big Muddy in Illinois; passes on to the Ohio River at Golconda; is again severed by the Ohio, and, passing through Kentucky, merges itself into the Cumberland Mountains between the heads of the Kentucky River and Big Sandy on the north, and the Cumberland River on the south.

"We have thus traced a connection between the eastern branch of the Rocky Mountains at Long's Peak and the Cumberland Mountains in Kentucky, only broken by the Mississippi, Big Muddy, and Ohio Rivers, showing throughout its entire length certain geological features, and at its eastern end exhibiting topographical similarities to its western. This ridge is at an elevation much above all the other ridges in the valley of the Mississippi, and from this circumstance I have formed a theory to account for the prairies to the north of it, but which I shall omit from this article.

"From the west boundary line to the *datum line*, the two main branches of the principal ridge (which I shall now denominate, for the sake of distinction, the 'Lamine Ridge' and the 'Ozark,') have the same characteristic features, which are great width and regularity of summit, general uniformity as to grades, and the very gradual descent to the valleys of the streams which intersect their slopes on every side—to the eye of the engineer presenting a delightful prospect in their peculiar adaptation for railroads, plank roads, etc.

"**Topography of Eastern and Western Missouri compared.**—Referring again to the map, we discover that east of the *datum line*, the main streams running northwardly into the Missouri, from the dividing ridge, pass much nearer to one another, and although generally parallel in their course, yet in their meanders approach each other very frequently. Again, the branches of one stream will head within two or three miles of another main stream—as, for example, I refer to the ridge between the Gasconade and Osage. Many small streams of both rivers head past each other within a very short distance of the other main stream. This is the peculiar feature of the topography *east* of the *datum line*. The ridges branching off from the main ridge, between two unimportant branches, frequently are found to be higher and more irregular in their grade at the summit than the principal one; indeed, from a personal and instrumental

examination, it has been pronounced *a more remarkable country than any within the States.* Hence, in my examination of its geological features, when compared with those of the Sierra Madre, I unhesitatingly pronounce it to have been subjected to the same volcanic influences, although in a milder form. The characteristic rocks are identical with those of Long's Peak, and many other points of the Sierra Madre.* The main dividing ridge, before mentioned, east of the *datum line*, becomes broken, irregular, and mountainous; as it approaches the head of the Piney, Maramec, Indian Creek, and Big Rivers, on the north, and Eleven Points, Current, Black, and St. François on the south, it becomes more and more broken, irregular, and ill defined; and as it approaches the seat of volcanic action, near the Iron Mountain and Pilot Knob, (those most wonderful of all natural objects,) the ridge proper loses itself in a strange anomaly—a valley. Yes, *a very valley* on one of the highest ridges in the State! The mountains which form this valley rise up from the summit of this ridge, mostly of metalliferous formations, generally covered with a mixed growth of timber. The autumn scenery of the West is celebrated in song and on canvas; but I am satisfied," continues Mr. Singleton, "neither harp, pen, or pencil could portray one-tenth of the beauties of that one glance, as I surmounted the ridge, from the summit of which, by one '*coup-d'œil,*' my soul drank in all the beauties of the Bellevue Valley.† As I have already remarked, this ridge continues its course unbroken to the Mississippi River, at the Grand Tower; but previous to which it branches in several directions: 1st. Northwardly, toward the Maramec, forming the divide between the Big River of the Maramec and the various short and rapid streams that run into the Mississippi, which I shall term the Maramec ridge. 2d. Southwardly toward the sunken district in Scott and New Madrid Counties, east of the St. François, called the St. Francis ridge, and gradually loses itself in the valley of that stream, in the sunken region, and the Mississippi bottom.

"The first branch, or Maramec ridge, possesses all the features of the main ridge—more broken and irregular as it approaches, and modifying these traits as it recedes from the parent trunk, until at the Maramec it is similar to the bluffs on the Upper Missouri River, which

* Since the return from the Rocky Mountain gold regions, to Southeast Missouri, of persons who had noticed the similarity in the geological features of the two sections, explorations have been made which seem to indicate that there are very rich and extensive mines of gold in Southeast Missouri. (See Iron and Madison County.)

† See view of Pilot Knob, also view of Ironton from the summit of Pilot Knob.

are the breaks of the first main branch, or Lamine ridge, east of Council Grove. In this ridge, and the branches from it, are our most valuable lead mines, copper mines, and stone quarries.

"The southern slope of the main or Ozark ridge from the *datum line*, to the geologist becomes strikingly interesting as he approaches its eastern terminus. First, are the points running immediately down to White River, in all of which, near the main ridge, are evidences of coal; as he approaches the Eleven Points, the mineral resources become more interesting, until having reached the waters of the Current River, he is involved among intermediate hills, knobs, and mountains of metallic deposits of iron, lead, copper, gold, silver, zinc, cobalt, and many other rare metals; while porphyritic and granitic formations lead him to imagine himself at once transported to the 'Stony Mountains,' or the 'Nevada' of California itself. The topographer can only look on with wonder and amazement. Where shall he begin his sketch? Where place his main divide? Echo answers, 'Where!' With 'confusion worse confounded,' 'rocks on rocks piled mountains high,' and a dozen other poetic sentences which I might quote, to describe faintly what in reality exists, all whirling through my brain: even to contemplate such a general 'crash of worlds,' my good friend, the geologist, is quietly seated, hammer in hand, pounding away, with his specimens around him, oblivious of the world! Can I describe a banquet-room after a drunken revel? The surgeon may heal the broken heads and noses, and the cabinet workman the chairs and tables; but I have naught to do there—the Earth and her sisters have had a glorious spree, and I leave those most interested to make the best of it.* The topographer has no business there—he cannot possibly describe it. So let us hasten to another equally interesting feature of a different nature—the country of the St. François. While the same convulsions of nature were going on, and the country near the Iron Mountain, and southwest of it, was elevated, that near the lower St. François was depressed. We have no reason to doubt that from the last bluff on the west side, below the mouth of the Ohio to the mouth of White River, the general level of the country on the river was the same as above that point; but by the great earthquake which raised the one, the other was sunken, and is now as irregular in its lakes, rivers, and creeks, as the former is in its ridges and streams."

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* Of course, the writer does not refer to the earthquakes of 1811–'12, which, though they changed the surface of this section very materially, produced little or no change in any other portion of the State.

In another portion of this work, (St. Louis County,) the idea is advanced, that at one time the level of the Mississippi River, above the main ridge, was probably 200 feet higher than at the present time, and that there were then Falls in the Mississippi, at the Grand Tower, probably as extensive as those of Niagara. We submit it to geologists, whether the present appearance of the rocks at Grand Tower, where this ridge has been cut through, and the fact that the great coal basin, as well as the prairies of Illinois, Missouri, and Iowa lie north of this great natural barrier, do not justify the conclusion that such has been the case, and that the great coal basin and the prairies were formed during the period when that portion of the Mississippi valley must have been a vast body of water!

"**The eastern section of the State** is broken and irregular in all its ridges—its streams tortuous, rapid, and of sudden descent; draining a country rocky and precipitous, where its escarpments approach the valleys; the streams excavated to a great depth below the summit of the ridges, and rising by a gentle slope to within a short distance of the ridge, then by a rapid ascent gaining its summit. So universally is this the case," says Mr. Singleton, "that in all my surveys for railroads, a tunnel with very heavy ascending and descending grades was necessary to effect the transit from the head of the valley of one stream to another.

"**The western section** is generally regular and uniform, both in its vertical and horizontal sections; the streams, descending from the summit ridges by gentle slopes to the main valleys, are almost imperceptible in their descent; the ridges are wide, continuously direct, and uniform in grade, mostly covered with prairies, and peculiarly adapted to the construction of railroads."

In speaking of the geography of Missouri, Professor Schoolcraft says: "It possesses some of the most prominent geographical features of the western country, and from the meeting of such mighty streams on its confines, and its relation to all the country situated north and west of it, must become the key to all the commerce of those regions, and is destined to have a commanding influence on the surrounding States, and on the political character and mutations of that country. The country west of the Mississippi differs in some respects from any other section of the western country, and affords a variety in its physical aspect which is nowhere else to be met with. A great proportion of the lands in this territory are of the richest kind, producing corn, wheat, rye, oats, hemp, flax, and tobacco in great abundance, and in great perfection. The lands bordering on the Missouri River, as far as the territory extends, (in 1819,) are rich beyond comparison.

* * * "The traveler in the interior is often surprised to behold, at one view, cliffs and prairies, bottoms and barrens, naked hills, heavy forests, rocks, streams, and plains, all succeeding each other with rapidity, and mingled with the most pleasing harmony. I have contemplated such scenes, while standing upon some lofty bluff in the wilderness of Missouri, with unmixed delight; while the deer, elk, and buffalo were grazing quietly on the plains below."

"Although there is much high land in this territory, there is perhaps none which, strictly speaking, is entitled to the appellation of a *mountain*. A ridge of high land, called the Ozark chain, commencing on the banks of the Maramec near the Fourche à Courtois, extends in a southwestern direction to the banks of White River in Arkansas Territory, a distance of about 400 miles, and occasionally rises into peaks of mountain height. This ridge divides the waters of the Missouri from those of the Mississippi. The body of red granite found on the head of the St. François, lies in mountain masses, and forms, in connection with the accompanying rocks, some of the most rude and terrific scenery, full of interest in a mineralogical as well as a geological point of view."

The Granite Mountain here referred to is north of the center of township 34, range 3 east, and about 2 miles due west from Middlebrook on the Iron Mountain Railroad, and about 5 miles southwest from Pilot Knob.

"The region of the Ozark range of mountain-development is one of singular features, and no small attractions. It exhibits a vast and elevated tract of horizontal and sedimentary strata, extending for hundreds of miles north and south. This range is broken up into high cliffs, often wonderful to behold, which form the inclosing walls of river valleys. The Arkansas itself forces its way through about the center of the range. The Washita marks its southern boundary. The St. François and Maramec, at the mouth of the former of which De Soto landed, constitute its northern limits. The junction of the Missouri with the Mississippi may be said to be its extreme northern development. The Missouri, from the influx of the Osage, is pushed northward by the Ozark range. It rests, upon the south, upon the primitive granites, slates, and quartz rock of Washita. The celebrated Hot Springs issue from it. The long-noted mines of Missouri, which once set opinion in France in a blaze, extend from its northeastern flanks. The primitive sienites and hornblende rocks of the sources of the St. François and Grand Rivers support it. The Unica or White River, the Strawberry, Spring River, Current, and Black Rivers descend from it and join the Mississippi. The Great

and Little Osage, and Gasconade, flow into the Missouri. The great plains and sand desert, which stretch at the eastern foot of the Rocky Mountains, lie west of it. It is not less than 200 miles in breadth. No part of the center regions of the Mississippi valley exhibits such a variety in its geological constituents, or such a striking mineralogical development. Its bodies of the ore of iron called iron-glace are unparalleled. These are particularly developed in the locality called Iron Mountain, at the sources of the St. François. Its ores of lead, zinc, antimony, and manganese are remarkable. Its limestones abound in caves yielding nitre. Salt and gypsum are found in the plains, on its western borders. Its large blocks of quartz rocks, which are found north of the Arkansas River, particularly scattered over the formations crossing the Little Red, Buffalo, and White Rivers, about the Buffalo shoals, furnish indications of the diluvial gold deposit, which would justify future examinations."—*Schoolcraft's Adventures in the Ozark Mountains*, p. 113.

Notwithstanding that the Ozark range presents a rough, rocky, confused appearance in some portions, and that its perpendicular walls here and there attain an elevation of from 100 to 400 feet, overhanging the streams and valleys below, there are other portions of the ridge, especially in the western part of the State, where the slopes on either side are so gradual, and the table-lands upon its summit so extensive, that the traveler would pass entirely over it without any knowledge of this being the Ozark ridge, except that the elevation attained everywhere presents an extensive view of the surrounding country.

And here we would correct some erroneous impressions in regard to Missouri, and show their origin. Upon some of the first maps of the State, the "Ozark Mountains," have a prominence that would be no disgrace to the Alleghanies, and some map publishers of the present day still copy the information from these old editions, errors and all. The following article appeared in the *St. Louis Enquirer*, (Thomas H. Benton, editor,) December 1, 1819, (in reply to an article from the *National Intelligencer*, in regard to the formation of the proposed State of Missouri.) The editor says: "After you get forty or fifty miles from the Mississippi, the arid plains set in and the country is uninhabitable, except upon the borders of the rivers and creeks." Again he says: "Take up Mellish's map—look for St. Genevieve—carry your eyes west to Mine á Breton, and you are upon the confines of a desert; six miles farther, the inhabitable land gives out, and the naked and arid plains set in." Speaking of the country north of the Missouri, the same writer says: "The Grand Prairie,

a plain without wood or water, which extends to the northwest farther than hunters or travelers have ever yet gone, comes down to within a few miles of the town of St. Charles, and so completely occupies the fork of the Missouri and Mississippi Rivers, that the woodland for 300 miles up each only forms a skirt from five to twenty-five miles wide, and above that distance the prairie actually reaches the borders of the rivers in many places."

Such was the opinion held in 1819. Let us see what Professor G. C. Swallow says of these same portions, after a careful examination, forty years later.

The southwestern branch of the Pacific Railroad traverses the "naked, arid, and uninhabitable" country above spoken of. In his lengthy and able report upon the character of the lands of this company, the State Geologist says of the soil: "Almost every acre of the alluvial bottoms throughout this entire region has a rich, durable soil, which is usually well adapted to the culture of corn, wheat, tobacco, oats, and the grasses; some would yield good hemp. Where the silicious marls of the bluff are well developed, the upland soils are rich, fertile, and durable. This variety of soil prevails in all the best upland on the line of the road, particularly in the eastern and western extremities. In Oliver's prairie, Pool's prairie, and Sarcoxie prairie, in Newton; Grand and Kickapoo prairies in Green; Pleasant prairie in Webster; Dimond prairie in Jasper; and Ozark prairie in Lawrence, the soil is excellent. It possesses the same good qualities in some of the timbered portions of all the counties above named. There is a soil, somewhat inferior to the preceding, which covers large areas in the region under consideration. It also rests upon the marls of the bluff, where that formation is somewhat clayey, and where it has been injured by washing. This variety is found on the ridges and undulating portions of the country, where the white, post, and black oaks, and summer grapes abound, and white hickory, dwarf sumac, and hazle are less prevalent. This same soil also occupies the prairies, which are somewhat inferior to those mentioned above. It is also true, contrary to the opinions of some, that the central counties on the line of this road have large areas of most excellent land." Again he says: "The time is not far distant when the *poor flint ridges* and terraced slopes of Southern Missouri will be more valuable for vineyards than the best lands of the State for the other departments of agriculture."

Hence the reader has reliable information respecting the soils of the southern portion of the State. What is said of "the plain without wood or water, which extends farther than hunters or travelers

had ever gone" in 1819? The Hannibal and St. Joseph Railroad passes through very nearly the center of the northern half of the State. In a letter from the State Geologist, giving his opinion of the lands along the line of this road, he says: "By far the larger part of it is a high, rolling country, and about equally divided into prairie and timber; all well watered with numerous springs and streams. A small portion of the country is broken into ridges and knobs; and the larger streams are bordered by rich alluvial bottoms. Nearly all the soil of this region is based upon the fine silicious marl of the bluff formation. As this fact would indicate, they possess all the good qualities of the very best Western soils. Those in the valleys of the streams are not inferior in fertility to the very best alluvial soils; but those upon the ridges and knobs are of a lighter character, and much inferior for the ordinary uses of the farmer. It is, however, very probable that these soils will be more valuable for the cultivation of the grape, than even our richest soils for the ordinary purposes of agriculture; for the grape will succeed on the poorer ridges, when the soil has the proper composition. Thus it will be seen, that the lands of your company are located in one of the richest and most desirable regions of the West. The soil is scarcely surpassed in any region of equal extent, and yet the country is high, undulating, well watered, and salubrious. It is so divided into timber and prairie, as will render the opening of farms most convenient and profitable. The prairie is ready for the plow, and the best of timber at hand for buildings and fences. But the vast coal-beds, beneath the soil, give these lands a value far above all ordinary prices. According to Major Hawn's surveys, a large portion of these lands contain at least fine workable beds of good coal. These beds will contain an aggregate thickness of fifteen feet, which will yield not less than 20,000 tons per acre. The coal alone, at only one cent per ton, is worth $200 per acre. Good limestone, suitable for all building purposes, is abundant along the line of the road. Clays, of excellent quality for common and fine brick and pottery, are found in large quantities. The numerous streams which pass through this region afford a large amount of water-power, and many good sites for mills and factories."

Northern Missouri.—From the facts given in the above extracts, as well as the information contained in the descriptions of the several counties, the reader will perceive that the portion of the State north of the Missouri River exhibits a desirable medium between a mountainous and a level country—a bleak prairie and a densely-timbered region. It is less broken and hilly than most of the Eastern and

Middle States, or the southern portion of this State, and less level or flat than portions of Illinois and many of the Southern States. As will be seen by reference to the map, this section is well watered, the principal streams running from the north to the south, and many of them present good facilities for water-power, (which, however, are less numerous than upon the streams in the southern part of the State.) The ridges or divides between the streams are generally sufficiently elevated to afford natural roads of the most perfect character, passable with heavy loads during all seasons.

The "Elk Knobs," in Macon County, are worthy of mention, and are fully described in the chapter devoted to "Natural Curiosities," where will also be found a description of the "Mamelles," the "Cedar Pyramid," and the "Rocky Cliff," in St. Charles County.

The Submerged Lands of Missouri.*—The portion of the State of Missouri that is inundated, comprises the counties of Cape Girardeau, Scott, Mississippi, Wayne, Stoddard, Butler, New Madrid, Dunklin, and Pemiscot, embracing, according to the returns made to the Surveyor-General's office (including all the swamp lands in the Jackson land district) 1,856,120 acres. "A portion of each of the above counties is covered with water, and possess an alluvial soil; the lands are low and marshy, interspersed by streams, rivers, lakes, swamps, bayous, bogs, and marshes; although a part of the swamps is not submerged by water the whole year, but the water remaining stagnant on these low and marshy lands during the hot summer, become very impure and putrid. The vegetation being very rank and abundant on this rich and marshy soil, mixes with the putrid waters, and when decomposed fills and renders the atmosphere impure and unhealthy, which adds greatly to disease; and as the waters are dried up from these swamps, there is a sediment, stench, and poison left on them that cause disease and death, not only to those that live on their borders, but likewise to the inhabitants that live in the vicinity. A great portion of these swamps is not susceptible for the habitation of man, except a numberless group of islands interspersed, which are occupied during certain seasons of the year by hunters and trappers. It is a remarkable fact, that there is a chain of low, level, and marshy lands, commencing at the City of Cape

* In addition to our personal knowledge of this region, we have compiled many of the facts and estimates, made by actual surveys, from the able reports of F. A. Rozier, Esq., Chairman of the Southwestern Convention, held at Memphis; also from the concise reports of Messrs. O'Sullivan and Morrell, Engineers of the Iron Mountain Railroad; and from data furnished W. S. Moseley, Esq., of New Madrid.

Girardeau, Missouri, and extending to the Gulf of Mexico; and between these two points there is not a rock landing, except at the small town of Commerce, on the west side of the Mississippi; there is, furthermore, only one ridge of high land from Commerce to be met with on the west side of said river, which is at Helena, Arkansas. From the City of Cape Girardeau, running into the State of Arkansas, there is a strip or tongue, 350 miles long, of beautiful and excellent lands, along the western margin of the Mississippi, which is well inhabited, having an average of ten miles wide, and is entirely cut off and stands isolated from the interior of Missouri and Arkansas, by the great swamps lying west of it, and deprives and cuts off all communication from the interior southern part of Missouri and northern part of Arkansas, for the distance above mentioned to the Mississippi River."* The lands west of these swamps are very fertile and rich—the timber unsurpassed in size and quality.

"The earthquakes of 1811–'12 proved very injurious and disastrous to Southeast Missouri, and were felt far and wide. They changed the course of the streams and rivers, which occasioned the waters to spread in every direction; and made high land where it was low previous, and in elevated places sunk them, thus causing the rivers and streams to overflow a great extent of country. These earthquakes are still remembered by many of the oldest settlers; when the whole land was moved and waved like the waves of the sea, and the majestic oak bent his head to the ground like a reed, and the terrible fact that the waters of the mighty Mississippi (opposite the town of New Madrid) rolled up stream for ten miles, carrying on its bosom barks, keel-boats, and every species of craft, with a rapidity unknown, and causing destruction of property and life."†

There are four large swamps that originate in Missouri, to wit:—The White Water or Little River swamps, the St. John's, the James, and the St. François swamps.

The following is from the report of Messrs. O'Sullivan and Morrell, before alluded to:—

"The swamp lands of Southeast Missouri all lie southeast of a line drawn from just below Cape Girardeau, on the Mississippi River, to a point on the Arkansas State line, in range 3 east. This line is not straight, however, but starts from the Mississippi River, on a course about 12 deg. south of west, and deflects gradually to the southward,

* Since the above report was made, the Cairo and Fulton Railroad has been constructed, and is now in operation some twenty-five miles west from the Mississippi, passing through Charleston, Mississippi County.

† See description of "New Madrid Earthquakes" in another chapter.

until it crosses the line between ranges 5 and 6 east, making a curve in this distance with a versed sine of about 9½ miles, thence to the Arkansas line, in range 3 east, on a general course of south 50 deg. west. This line is the termination of the high, broken ridges that spur out southwardly from the Ozark range, and form a rough, broken country for some seventy miles, until they are cut off abruptly at this line.

"The swamp lands may be divided into three distinct divisions. The west swamp or Black River division; the middle swamp or Castor River division; and the overflowed lands bordering on the Mississippi River, above New Madrid, may be called the Mississippi division. The Black River and Castor divisions are divided by a high, broken ridge. This ridge commences on the east side of the St. François River, opposite the Chalk bluff, (the termination of the high, broken ridge known as Croly's ridge,) and runs northeasterly in the same general direction of Croly's ridge, to a point about three miles east of the town of Bloomfield; thence bears northwesterly and terminates at Mingo swamp.

"This ridge is very broken—the crest of it being a succession of undulations, and the east slope of it is very abrupt, as shown on the profiles; it is of the same character as the north end of Croly's ridge, and, from the appearance at Chalk bluff, may at some day have formed part of the same ridge—the St. François having cut a channel through it since. It will be seen that this is an isolated ridge, surrounded by overflowed lands.

"The Castor and Mississippi divisions are divided by the New Madrid and Benton ridges, commencing at New Madrid and extending north about thirty miles; in this distance the ridge averages about three miles wide, and is nearly level, and generally about twenty-five feet above overflow; thence, after crossing a slough which connects the Castor and Mississippi divisions, the Benton ridge sets in, which is a high, broken one, extending to the Mississippi River at Commerce, and thence continuing some eight miles up the river, and there terminating on the southern border of the Mississippi inlet.

"As the slough cutting this ridge, south of Benton, can be diked at a small expense, it is of but little consequence; and, in speaking of the swamps, I will consider the ridge unbroken by any water-course from New Madrid to the Mississippi, at the southern border of the Cape Girardeau inlet.

"The Black River and Castor divisions are overflowed through the

inlet mentioned from the Mississippi, below Cape Girardeau. This inlet is at the narrowest point about three miles wide, (averages five miles,) and the water from the Mississippi River, at the time of the flood in 1844, ran through it to a depth of from four to six feet—say five feet for the whole width. This inlet bears southeast twelve miles to the Castor division, when the water, in time of high floods, spreads out to a width of ten miles; and this width of overflow increases as the water runs south, until at a point opposite New Madrid it overflows a belt of some fifteen miles in width.

"A portion of the Mississippi water also runs through Mingo swamp to the Black River division, and fills the channel of the river to the tops of the banks, and runs through the Blue Spring slough, the Caledonia slough, the Monorkene slough, and other smaller ones to Black River, which it fills to its banks, and at low places runs over the west bank, and submerges the country westward to Cane Creek and a portion west of this creek to little Black River. Farther south, below 'Ash Hills,' it also breaks over the banks of the St. François, and runs over the flat surface of the country west of that river, submerging it from one to four feet in depth, and is received in a lake at the Arkansas line, about six miles west of Chalk Bluffs. In this lake heads Cache River, which runs into Black River, about 125 miles south of the State line.

"Another source of overflow of the swamp lands is from the drainage, during heavy rains, of the country to the north, being the southern slope of the Ozark range.

"The southern slope of the Ozark divide is very abrupt, falling off 700 and 1200 feet in a distance of forty and seventy miles. These swamp lands receive the drainage of 3518 square miles of this slope, through the channels of Black River, St. François, Castor, and White Rivers, and falling, as these rivers do, at an average of twenty feet per mile, from their sources to the flats, where the fall southward is only one and a half feet per mile, the channels become choked, and hence the overflow.

"By keeping off all overflow, there is but a very small portion of these lands that will be unfit for cultivation, and those of first quality.

"A stranger in traveling over this flat country, after a season of no unusual flood, would be surprised that such a body of rich land, in such close proximity to the river, should be yet a wilderness. The bottom, at such a time, is as dry as the high ridges north, except the cypress sloughs which tread their way at various places, the tall timbers on these sloughs looking in the distance like some high ridge stretching across the country.

"These sloughs vary in width from two hundred to eight hundred feet, and are from five to ten feet below the general plane of country, and will at some future day be reclaimed after the timber shall have found a market. This timber, after the railroads are constructed, will become valuable, and be a large source of wealth to the country. The cypress-trees are of an enormous size, and run up perfectly straight to a height of from sixty to eighty feet without a limb; and the forest being void of undergrowth presents a grand spectacle, looking like a thousand symmetrical columns supporting some immense vault.

"The timber of the drier lands is superior to that of the uplands to the north. White oak of the largest size is here found, the trunks maintaining a nearly uniform girth to a great height. The other kinds of oak, hickory, and various other timbers, grow in abundance.

"On the banks of Cane Creek, Black River, St. François River, Castor River, and Little River is a thick growth of cane, but this does not reach to a great height, being kept down by the cattle that range over the whole country and subsist entirely on it during the winter.

"When we consider the excellent quality of the swamp lands, the productiveness of which is not surpassed by any of the Illinois lands, and the source of wealth to Southeast Missouri that might be developed by settlers coming in, and, it might be added, the important bearing this would have on a railroad from St. Louis, it becomes an important question, can the swamp lands be drained? and if so, what would be the cost, and whether the end to be accomplished would justify the means?

"In the Surveyor-General's office the area of overflowed lands in the Jackson District is found to be 1,856,120 acres. Assuming that about two-thirds of these lands would be available for cultivation, and of a quality that would be reclaimed by a judicious system of drainage, this would be equal to 1,237,412 acres, say 1,200,000 acres. These lands are now worth but little, except for the timber they bear, which at present may be considered inaccessible to market. Bring them to a condition, by a proper drainage, so as to invite a class of settlers who are looking for choice land, and they would bring, on an average, at very low figures, $2 50 per acre, equal to $3,000,000.

"We now suggest an outline for a system of drainage, which considerable knowledge of the swamp lands, acquired by observation on the ground, and by consulting the U. S. notes in the office of the Surveyor-General, warrants as probably practicable.

"First. We would shut out the water from the Mississippi through the Cape Girardeau inlet, which could be done effectually by an embankment three miles long and averaging ten feet high. Then

for the Black River and Castor division there would be only the draining from the south slope of the Ozark range, and the local drainage of the flats themselves. As the latter is a matter of much detail, and of no great importance in a general system, we will not notice it here further than to say that it can be readily accomplished through the numerous small sloughs that abound throughout the entire overflowed region. Then we have on these two divisions the overflow from the four rivers—Black, St. François, Castor, and White—to dispose of.

"**Black River Division.**—Assuming the Cape Girardeau inlet to be closed, the water that overflows this division of the swamp lands then comes in by Black and St. François Rivers. The former drains about 1130 square miles, and the distance by the stream from the head of the longest fork to the swamp lands is ninety-four miles, and a cross section of the river where it enters the swamp lands, at the highest known flood, is 3950 square feet.

"The St. François drains about 1250 square miles, and by the longest fork has a length to the swamp lands of 105 miles, and a cross section of water, at the highest known flood, of 9400 square feet, taken above the mouth of Mingo swamp. Mingo swamp, as before described, connects the Black River with the Castor division north of the Bloomfield ridge. This swamp is two miles wide, and the drainage from it to the St. François, in time of low water, is through a channel which is twenty feet deep, below the plane of country where it enters the St. François.

"At a point below the old Indian ford, where the high grounds recede from the west bank of the river, the cross section of high water of the St. François is but 5100 square feet, and at a point about seventeen miles below, or eleven miles above Chalk Bluff, a cross section of the same is only 2330 square feet. Assuming the current to be of equal velocity at these different points, it will be seen that forty-five per cent. of the water that comes down the St. François in local floods passes through Mingo swamp into the Castor division, and that thirty per cent. overflows its west bank in its progress to Chalk Bluff, running over the country to Black and Cache Rivers, then down those streams, discharging into the Mississippi finally through White River, 180 miles below the Missouri line, while less than twenty-five per cent. finds its way down the St. François and through the ridge at Chalk Bluff.

"The banks of the St. François, at the edge of the swamp just below Indian ford, are twenty and twenty-five feet high above low water; and at the point mentioned as eleven miles north of Chalk Bluff, where the other cross section is given, the banks are but ten feet high, and the channel too is narrower.

"At a point just below Mingo swamp, the end of the Bloomfield ridge is but two and a quarter miles from the St. François, and the side of the bluff comes close to the river on the west side, the intervening bottom between the ridge and the river being but three feet below high-water mark. We would propose throwing up an embankment across this two miles of bottom to a height of about six feet, and throwing a low dam across the river sufficiently high to throw all the water through Mingo swamp into the Castor division, except so much as the banks will contain at the point indicated as near Chalk Bluff, after stopping some of the narrow gullies which the river has cut, through which the water escapes, and clearing the river of its rafts of drift. This could be done at a moderate expense, a mere trifle compared with the benefits to be derived in both Missouri and Arkansas.

"The water that flows over the west bank of the St. François in floods nearly all runs into Arkansas west of Croly's ridge, and, as before demonstrated, is equal to thirty per cent. of the drainage of 1250 square miles; during, however, only the time that the water is at its maximum height, which is the most important time, especially north of the Missouri line. Black River could then be easily kept within its banks, and the fine body of rich land west of it, embracing about five townships, would be fit for settlement.

"**Castor Division.**—Having shut the Mississippi out by the embankment across Cape Girardeau inlet, we have only the draining of the Ozark slope to contend with through White, Castor, and St. François Rivers, the body of water from the latter being greatly increased by the improvement already suggested below Mingo swamp. Thirty per cent. of the whole volume of water at its maximum height in the St. François having been diverted by the proposed improvements, and as forty-five per cent. before flowed through Mingo swamp from the same river, this gives seventy-five per cent. of all the water in the St. François, when at its extreme height, as passing through Mingo swamp into Castor division.

"To compensate for diverting thirty per cent. of the St. François into this division, we would propose throwing up a dike from the north end of the inlet dike to the point where White River enters the swamp, a distance of about twelve miles. It is presumed that this may be done at a moderate expense, making it near the ends of the ridges where the overflow is not so deep, and raising the bed of the stream by a dam across the old channel where the river enters the swamp.

"White River drains 590 square miles of the Ozark slope, and the

distance to the head of the longest fork is forty-seven miles, it being about the same with Castor River, which drains 548 square miles, and to the head of the longest fork from the swamp is fifty-three miles.

"It will be seen that the proposed improvement of diverting White River would carry more drainage off from the Castor division than the surplus portion from the St. François brought in by the proposed change, even supposing that this surplus be brought in during all the stages of the water, which is not the case.*

"The improvements suggested for the Castor division, then, are the shutting out entirely the Mississippi River and the White River, to compensate for thirty per cent. of the St. François during its highest stage let in through Mingo swamp; and as it is fair to assume that a river heading among mountain ranges, like the St. François, with its longest fork only 105 miles in length, would remain at a maximum in flood but a few hours at once, and as the White River drains more country than the Castor River, we think it might be safe to assume that four-tenths of the drainage is diverted by the proposed improvement, in addition to that most important of all suggestions for this and the Black River divisions, the shutting out of the mighty volume that escapes from the Mississippi.

"By the figures shown on the map, and by looking at the profile, it will be seen that the high-water mark of the Mississippi River at New Madrid is sixteen feet above the high water in the swamp, ten miles directly west of the same point. The high-water marks are presumed to be correct, having been shown at different points by people who professed to understand them, and the height of different places do not materially conflict.

"The country below New Madrid we know nothing of from observation. The fall of high-water mark from Cairo to New Madrid is twenty-nine feet by our levels, and the distance by map is sixty-two miles by the river, making the fall of the water average five and six-tenths inches per mile. Assuming that the fall is the same for some distance below New Madrid, then to fall sixteen feet, we go thirty-four miles by the river below New Madrid, which gives an elevation of high-water mark equal to the elevation spoken of west of New Madrid, and consequently the Mississippi River can have no outlet of importance in this distance, which we are informed is true, by those acquainted with the country; and, in fact, we have been told that no

* As will be seen, no account is taken of the greater velocity which rivers have near the surface of the water in floods. This would augment our estimate of the percentage that washes over the west bank of the St. François, as well as our estimate of the proportion that does now run into the Castor, and the surplus which would be thrown in by the construction of the proposed dam, etc.

outlet occurred on the west bank of the river from New Madrid to Memphis.

"The country west of New Madrid is well known as having been sunk several feet by an earthquake in 1811. Where once was high, timbered land is now covered with standing and running water, being the discharges of Castor and White Rivers, which here form one stream which is called Little River.

"The route to Memphis, as shown on the map of this division, runs mostly on land said to be above overflow. The first ten miles south of the point where it crosses the Bloomfield ridge, we know from observation on the ground, is some fifteen feet above overflow, and is there mostly a sandy prairie which is said to continue much the same to the Arkansas line.

"**Mississippi Division.**—On this division the overflow from the Mississippi River must be kept out by a system of levees, but the position of these must be determined by more extended surveys than those made by us with only a railroad route in view. Much of the ground is now above overflow. Long prairie and Matthew's prairie are both extensively settled, and contain some of the finest farms in Southeast Missouri.

Approximated estimate of cost of carrying out the proposed system of drainage for Southeast Missouri.

47,000 yds. embankment, No. 1, below Mingo swamp, at 25 cents per yard.	$11,750 00
Dam 160 feet long, at say $20	3,200 00
Rock protections on sides	1,000 00
Stopping the gullies when St. François breaks out at sundry points, say	10,000 00
	$25,950 00
162,000 yards embankment, near Cape Girardeau, 3 miles long and 10 feet high	40,500 00
For changing White River, say	160,000 00
Leveeing divide between Castor and Mississippi divisions	5,000 00
Leveeing 50 miles of the Mississippi River, averaging $4000 per mile	200,000 00
	$431,450 00
Engineering, contingencies, surveys, etc., etc	43,150 00
	$474,600 00

"We would repeat here that the above remarks are only intended to give what information we had collected in progress of survey, and not as a matured plan. They may be useful in either confirming or suggesting other plans."

OUTLINE HISTORY.

"The man who is ignorant of the transactions of former times, is condemned to a perpetual state of childhood."—*Cicero.*

The valley of the Mississippi was first discovered by Hernando De Soto, appointed by the Emperor Charles V. of Spain, as Governor of the Island of Cuba, and President of Florida. He explored the Lower Mississippi, as far north as the mouth of the Arkansas, in 1539, and passed up White River, crossed the Ozark ridge, and spent the winter of 1541–42 on the plains (or prairies) beyond—probably in the western part of this State. (See Vernon County.) He named the country "Florida."

After describing the Ozark hills in Missouri, Schoolcraft says: "Through these Alpine ranges De Soto roved with his chivalrous and untiring army, making an outward and inward expedition into regions which must have presented untoward hardships and discouragements to the march of troops. To add to these natural obstacles, he found himself opposed by fierce savage tribes, who rushed upon him from every glen and defile, and met him in the open grounds with the most savage energy. His own health finally sunk under these fatigues; and it is certain that, after his death, his successor in the command, Moscoso, once more marched entirely through the southern Ozarks, and reached the Buffalo plains beyond them. Such energy and feats of daring had never before been displayed in North America; and the wonder is at its highest, after beholding the wild and rough mountains, cliffs, glens, and torrents, over which the actual marches must have laid. Some of the names of the Indian tribes encountered by him furnish conclusive evidence that the principal tribes of the country, although they have changed their particular locations since the year 1542, still occupy the region. Thus, the Kapahas, who then lived on the Mississippi, above the St. François, are identical with the Quappas, the Cayas with the Kanzas, and the Quipana with the Pawnees."

In 1673, the Mississippi valley was further explored by Father Marequette and M. Joliet, from New France, (Canada,) who entered the Mississippi River at the mouth of the Wisconsin, and continued down the stream to the mouth of the Arkansas River,

which point they reached in 1673. Thus it will be seen that that portion of the Mississippi forming the eastern boundary of this State was discovered by the last-named French explorers, who were the first white men that had floated upon the Mississippi for a period of 130 years—or since the disastrous voyage of Louis de Moscoso, with the remains of De Soto's expedition, in the year 1543. Returning from the mouth of the Arkansas, they passed up the Illinois River, and discovered all that country in July, 1674.

In 1680, Robert Cavalier de La Salle fitted out an exploring expedition, consisting of Father Louis Hennepin and M. Dugay, with six others, to advance to the head waters of the Mississippi. Hennepin went no farther north than **Saint Anthony's Falls**, which name he gave them in honor of his patron saint, St. Anthony, of Padua. Thence they descended the Mississippi to the mouth of the Arkansas, and from there returned to Green Bay.*

In 1682, La Salle made a tour of exploration through the valley of the Mississippi, and to the "great river" he gave the name of **St. Louis**, and the country traversed by it **Louisiana**, both in honor of the King of France; and to the Missouri River he gave the name of **Saint Philip**. Continuing down the "St. Louis," on the 7th of April, 1682, he planted the colors of France near the Gulf of Mexico, and formally and solemnly claimed the Territory for France, giving it the name of Louisiana; he soon after returned to France, to make arrangements for colonizing Louisiana, which he had accomplished by July, 1684, when his fleet of four vessels left Rochelle, France; failing to recognize the mouth of the Mississippi, as they passed it, the fleet landed at the Bay of the Matagorda. His subsequent history is full of melancholy interest.

The discovery of the Mississippi by the Canadian French gave to France a conventional claim to navigate the great river and its principal tributaries, and to occupy and settle in the country traversed by them.

The further exploration of the Lower Mississippi was interrupted by the war between the Iroquois Indians and the British Colonies, against the Province of Canada, from 1689 to 1696. But the settlements formed in the Illinois country (east of the Mississippi) by Father La Salle were annually on the increase, by the accession of Canadian adventurers, who had heard of the fertile lands and the more temperate climate. Before the close of the seventeenth century "Old Kaskaskia" was known through not only all the Illinois country,

* Monette.

(of which it was for several years the capital,) but throughout Canada; and the Catholic Mission posts established by La Salle had grown into parishes, so great was the tide of emigration and so fair the fame of the country.

Soon after the termination of the war above alluded to, Count de Frontenac, then Governor-General of New France, proceeded to occupy the valley of the Mississippi, and in 1697 located colonies at several points, both north and south. Up to the beginning of the eighteenth century, settlements in New France were confined entirely to the eastern side of the Mississippi; but the reports made by a few wandering explorers, that both gold and silver were abundant in what is now Missouri and Arkansas, induced the French to turn their attention to the country to the west. Accordingly, early in the eighteenth century, Count de Frontenac prepared an expedition to visit the mines of Upper Louisiana. A fort was erected and settlements commenced, but the prejudices of the savages were soon excited, and their demonstrations of hostility induced the French to abandon this part of the country without making any permanent settlements.

The Missouri River next claimed their attention, and in 1705 they ascended to the mouth of Kansas River, and met with kind and hospitable treatment from the Indians, whose kindness on this occasion soon obliterated from their minds the remembrance of the opposition offered by the savages on the Mississippi.

The war in Europe at this time demanded all the resources of France, and required all the attention of her principal men, both in France and "New France;" and unable to keep up the usual advances, the king had allowed the colony of Louisiana to become reduced almost to starvation; and although unable to contribute either men or money to its support, the king was intent upon keeping from the hands of his enemies this country, which was believed to contain inexhaustible mines of gold and silver, which, when opened, would not only place the colony upon a permanent basis, but be sufficient to remove the debt of France, which during the reign of Louis XIV. had increased to upwards of two thousand millions of livres. "Mutual friendship and confidence" had been established between the French and all the Western tribes of Indians; and emigrants from the St. Lawrence continued to advance to the Illinois country, which was then settling up rapidly, and Old Kaskaskia had become the capital of the country, and the authorities during 1712 issued land titles for a "common field," and deeds and titles to aid the people in the pursuit of important public and private enterprise. In view of the prosperous present, and the promising future of the Illinois country,

(then looked upon as the "terrestrial paradise,") and the mines of precious ores believed to exist on either side of the great river, the king granted the exclusive privilege in all the trade and commerce of the province to Anthony Crozat, a wealthy and influential merchant of France, "who had prospered in opulence to the astonishment of all the world." His charter embraced sixteen years, from the 26th of September, 1712. Louisiana, as then held by France, embraced the entire Mississippi valley, from the Alleghanies to the Rocky Mountains, and north to the lakes in Canada. At this time there were less than 380 Europeans in the lower half of the district described, yet Crozat entered upon his projects with an energy which exhibited his confidence in his gigantic and hazardous undertaking. Crozat adopted for the government of the country the laws, usages, and customs of Paris, which were *the first laws* of civilized society that were ever in existence between the Gulf of Mexico and the Falls of St. Anthony, and were principally copied from the Roman civil law.

In 1712 M. de la Motte Cadillac was appointed royal governor of Louisiana by Louis XIV., and arrived in Louisiana in 1713. In order to enlist him in the commerce of the colony Crozat associated him as a partner in his operations. La Motte was a self-important, egotistical, proud man, whose elevation from obscurity in France to the position of "royal governor of Louisiana" rendered him almost unfit for the association of even his superiors. When he was ordered by the ministry to assist the agents of Crozat in establishing trading posts on the Wabash and Illinois, he at once got into bad humor, and had the hardihood to write back to the ministry: "I have seen Crozat's instructions to his agents. I thought they issued from a lunatic asylum, and there appeared to me to be no more sense in them than in the Apocalypse. What! Is it expected that for any commercial or profitable purposes boats will ever be able to run up the Mississippi into the Wabash, the Missouri or the Red River? *One might as well try to bite a slice off the moon!* Not only are those rivers as rapid as the Rhone, but in their crooked course they imitate to perfection a snake's undulations. Hence, for instance, on every turn of the Mississippi it would be necessary to wait for a change of wind, if wind could be had; because this river is so lined up with thick woods that very little wind has access to its bed."*

M. de la Motte was the first governor under the new grant, and arrived in the Illinois country (comprising Missouri) in 1713, and took possession of his government. Anticipating an astonishing

* Louisiana, by Gayarre, p. 137.

profit from the mines, which they hourly expected to find, no attention was given to agriculture except by a few individuals, and large investments were therefore necessary to purchase provisions, which, with the other expenses of the colony, greatly exceeded the profits of its trade; and, in 1717, after a trial of five years, having failed in all his plans, Crozat resigned his charter and returned to France.

Soon after the relinquishment by Crozat, the colony of Louisiana was granted by a patent, containing similiar privileges and restrictions, to the "Mississippi Company," or "Company of the West," with authority to monopolize all the trade and commerce of Louisiana and New France, to declare and prosecute wars, appoint officers, etc. This company was under the direction of the notorious John Law, and soon established a post in the Illinois country, where they built Fort Chartres, about sixty-five miles below the mouth of the Missouri, in 1720–21, which, at the time of its completion, was one of the strongest fortresses on the continent. Under this company, Philippe Francis Renault, who had been appointed "Director-General of the mines of Louisiana," with two hundred miners and skillful assayers, arrived in the Illinois country in 1719, and the miners were soon dispatched in different directions to explore the country on both sides of the Mississippi. During the year 1719 and 1720, Sieur de Lochen, M. de la Motte, and a number of others engaged in exploring the country lying between the Missouri and the swamps east of the Ozark hills; and in 1719 the former commenced digging on the Maramec, where he raised several hundred pounds of lead, from which, after tedious experiments, he produced two drachms of silver, and left the lead as worthless. They were in search of gold and silver; hence lead had but slight value in their estimation.

Those who have compiled the History of the Mississippi Valley make no mention of M. de la Motte after he was succeeded by M. de l'Espinay, as governor and chief commander of Louisiana; but we believe he was one of de Bienville's expedition when he discovered the mines in Madison County, which still perpetuate his name. Schoolcraft dates the discovery of these mines by him in 1720; but other circumstances go to prove that that section of country was explored, and lead ore found abundant, as early as 1718.

The miners and assayers sent out by the "Company of the West" were required to carefully observe and report the presence of any rich ores which might be discovered in their explorations, and to mark the localities. These excursion parties were either headed by Renault or M. la Motte, and in one of their earliest excursions, la Motte discovered the lead mines which bear his name, near Fred-

cricktown, and soon afterward Renault discovered the mines north of Potosi, which are named in remembrance of him. Failing to find either gold or silver, Renault and his miners turned their attention to working the lead mines, which was continued till 1742, when he returned to France; and from the number of ancient diggings and other indications, it is probable large amounts of ore were taken out and manufactured—principally shipped to France.

In 1720 the Spanish determined to take the country from the control of the French, in order to accomplish which they thought it necessary to destroy the nation of the Missouris, then situated on the Missouri River, and who were in alliance with the French, and espoused their interests. Their plan was to excite the Osages to war with the Missouris, and then take part in the contest. For this purpose an expedition was fitted out from Santa Fe for the Missouri in 1720. It was a moving caravan of the desert—armed men, horses, mules, families, women, priests, with herds of cattle and swine to serve for food on the route, and to serve for increase in the new colony. In their march they lost the proper route, the guides became bewildered, and led them to the Missouri tribes instead of the Osages. Unconscious of their mistake, as both tribes spoke the same language, they believed themselves among the Osages instead of their enemies, and without reserve disclosed their designs against the Missouris, and supplied them with arms and ammunition to aid in their extermination. The great chief, concealing his real thoughts and intentions, evinced the greatest joy, and promised, after they should have rested three days from their march, to join the expedition with them, and in the mean time the chief would assemble his warriors and hold a council with the old men of the tribe. Just before the dawn of the day upon which the company had arranged to march, the Missouris fell upon their treacherous enemies and dispatched them with indiscriminate slaughter, sparing only the priest, whose dress convinced them he was a man of peace rather than a warrior. They kept him some time as a prisoner; but he finally made his escape, and was the only messenger to bear to the Spanish authorities the just return upon their own heads of the treachery they had intended to practice upon others.*

To arrest any further attempt of the Spaniards to advance into Upper Louisiana, a French post was designed for the Missouri, and M. Burgmont was dispatched from Mobile to the Missouri River. He took possession of an island in the river, above the mouth of the

* Monette's Hist. Miss. Valley, vol. i. chap. vi.

Osage, upon which he built a fort, which he named "Fort Orleans." The war between the French and Spaniards continued, and the Indians who had been leagued in with the interests of the respective colonies (Louisiana and Florida) carried on their marauding excursions against the enemies of their respective friends. About the same time "Fort Chartres" was constructed on the Mississippi, under the instructions of the king, by M. Boisbriant, and a fort and trading post for the company at the mouth of Blue Earth River, on the St. Peter's, erected by Lesueur, who was accompanied by a detachment of ninety men.

On his arrival at the mouth of the Osage, Burgmont found the different tribes engaged in a sanguinary warfare, which prostrated all trade and rendered all intercourse extremely hazardous; hence his attention was at once turned toward bringing about a reconciliation, which he effected in 1724. In the mean time "Fort Orleans" had been completed and occupied; but soon after the declaration of peace between the contending tribes, "Fort Orleans" was attacked, totally destroyed, and all the French massacred.* Nor is it yet known by whom this bloody work was performed.

During the following sixteen years, the French seemed to be fated to disappointment and disaster. Their troubles with the Indians increased; the Bank of France under John Law, which promised so fairly, had proved worse than a bubble; several of their expeditions had resulted in the loss of large numbers of valiant and learned men, valuable treasure and stock; and the Directory, in view of the disasters they had experienced, determined to surrender the charter into the hands of the crown and retire from the American wilderness. The petition was readily granted, and by proclamation, dated April 10, 1732, the king declared the province of Louisiana free to all his subjects, with equal privileges as to trade and commerce.†

From this time to 1762, when the whole territory west of the Mississippi was ceded to Spain, no events transpired worthy of record in so brief a sketch as our limited space permits us to give.

Up to 1751 there were but six settlements within a hundred miles of the present site of St. Louis, to wit: 1. Kaskaskia, situated upon the Kaskaskia River, upon a peninsula, five miles above the mouth of that stream, and two miles by land from the Mississippi. 2. Fort Chartres, twelve miles above Kaskaskia. 3. Prairie du Rochter, near Fort Chartres. 4. St. Philip, or Little Village, four miles above Fort Chartres. 5. Cahokia, near the mouth of Cahokia Creek, about

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* Monette. † Stoddard.

five miles below the center of the present City of St. Louis. 6. St. Genevieve, upon Gabouri Creek, west of the Mississippi, and about one mile from its western shore. Kaskaskia was once the capital of the Illinois country, and in its palmy days contained about 3000 inhabitants; but after the country passed under the dominion of the King of Spain the population decreased, and at the time St. Louis was founded, in 1764, contained but about 425 inhabitants.

The territory known as Louisiana was ceded to Spain November 3, 1762, but nothing was known of this cession by the inhabitants for nearly three years afterward; hence the mistake made by La Clede, in February, 1764, in naming St. Louis in honor of Louis XV., whose subject he expected to remain for a number of years, when he was then really a subject of the King of Spain. The territory was not taken possession of by the Spanish until 1770. (See Early History of St. Louis, St. Charles, Howard, St. Genevieve, and Washington Counties.)

In 1762 Louisiana was ceded to Spain by France, and taken possession of by the Spanish in 1770. In 1780 an expedition was fitted out by the British commandant at Michillimackinac, upon his own responsibility, in order to conquer the towns on the right bank of the Mississippi, in consequence of the part the King of Spain had taken in favor of the independence of the United States in the then late war. His expedition consisted of 140 regular British troops and Canadian Frenchmen, and 1400 Indian warriors. After reconnoitering several days from the opposite shore, and by scouts lurking in ambush along the western bank of the river, they made the grand attack upon St. Louis, on the 6th of May, 1780, and were repulsed by Colonel Clark from Kaskaskia, who came to the relief of the St. Louisians, with a company of 500 men.*

During the year (1762) the first village was established upon the Missouri River, and named *Village du Cote*, now St. Charles. In 1787, New Madrid was laid out under the direction of General Morgan, from New Jersey, who had received a large grant of land. There had been a settlement of hunters and traders at this point for some time previous to his location here.

By the treaty of St. Ildefonso, made in 1800, Spain retroceded Louisiana to France, by whom in 1803 it was ceded to the United States, and taken possession of by American authorities on the 20th of December, 1803. "The settlements upon the Upper Mississippi, including the post at New Madrid, (which was just settled in 1786?)

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* Monette.

had been attached to the government of Upper Louisiana; and the census, as taken by order of the Lieutenant-Governor Delassus, at the close of the year 1799, presented the entire population at more than 6000 souls, including 880 slaves and 197 free persons of color."* This population was distributed as follows: St. Louis, 925; Carondelet, 184; St. Charles, 875; St. Fernando, 276; Marias des Liards, 376; Maramec, 115; St. Andrew, 393; St. Genevieve, 949; New Bourbon, 560; Cape Girardeau, 521; New Madrid, 782; and Little Prairie, 49. Total, 6028.

At different periods previous to 1811, a number of Delaware, Shawanese, and Cherokee Indians had built villages along the banks of the St. François and White Rivers, by a privilege granted them by the Spanish authorities, and up to 1812 they had conducted themselves to the satisfaction of all the white settlers. About the same time a few Creeks, Choctaws, and Chicasaws located upon the same waters, and were considered as outlaws by their respective nations, and their depredations among the whites were serious and frequent.

The name of Louisiana Territory was changed to that of "Missouri Territory," which was then advanced to the second grade of government, by an act of Congress, approved June 4, 1812. The first Council consisted of nine members, and the House of thirteen.

On the 1st of October, 1816, Governor Howard, by proclamation, reorganized the "districts," as heretofore called, into counties: St. Charles, St. Louis, St. Genevieve, Cape Girardeau, and New Madrid. The district of Arkansas formed a portion of New Madrid County.

The House commenced their first session on the 7th of December, 1812. The first representatives were: *St. Charles*—John Pitman and Robert Spencer; *St. Louis*—David Music, Bernard G. Farrar, William C. Carr, and Richard Caulk; *St. Genevieve*—Geo. Bullett, Richard S. Thomas, and Isaac McGready; *Cape Girardeau*—Geo. F. Bollinger and Stephen Byrd; *New Madrid*—John Shrader and Samuel Phillips. William C. Carr was elected Speaker, and Andrew Scott, Clerk.

The members of the first Council were: Jas. Flaugherty and Benjamin Emmons, of St. Charles; Auguste Chouteau, Sr., and Samuel Hammond, of St. Louis; John Scott and James Maxwell, of St. Genevieve; William Neely and Geo. Cavener, of Cape Girardeau, and Joseph Hunter, of New Madrid Counties.

In 1818, the people of the territory petitioned Congress for authority to form a State government. A bill was accordingly introduced

* Monette, vol. ii.

during the session of 1818–19, and contained, among other provisions, that of prohibiting slavery or involuntary servitude. It passed the House, but was rejected in the Senate. The bill was again brought up the ensuing session, and after an animated discussion which lasted several weeks, a compromise was entered into by the advocates and opposers of the "slavery restriction." The terms adopted were that slavery should be tolerated in Missouri, but in no other part of Louisiana as ceded by France to the United States, north of 36° 30′ north latitude. Accordingly the people of Missouri Territory were authorized to form a constitution, under which, when approved by Congress, Missouri should be admitted into the Union, on an equal footing with the original States.

The election for members of the Convention was held on the first Monday in May, 1820, and resulted in the choice of the following persons:—

Cape Girardeau.—Stephen Byrd, Richard S. Thomas, James Evans, Alexander Buckner, and Joseph McFerron.

Cooper.—Robert P. Clark, Robert Wallace, and William Lillard.

Franklin.—John G. Heath.

Howard.—Nicholas S. Buckhart, Duff Green, John Ray, Jonathan S. Findlay, and Benjamin H. Reeves.

Jefferson.—Samuel Hammond.

Lincoln.—Malcolm Henry.

Montgomery.—Jonathan Rumsey and James Talbott.

Madison.—Nathaniel Cook.

New Madrid.—Robert D. Dawson, Chris. C. Houts.

Pike.—Stephen Cleaver.

St. Charles.—Hiram H. Baber, Nathan Boone, and Benj. Emmons.

St. Genevieve.—Jno. D. Cooke, Henry Dodge, John Scott, and R. T. Brown.

St. Louis.—David Barton, Edward Bates, Alexander McNair, William Rector, Jno. C. Sullivan, Pierre Chouteau, Jr., Bernard Pratte, and Thos. F. Riddick.

Washington.—John Rice Jones, Samuel Perry, and John Hutchings.

Wayne.—Elijah Bates.

The Convention met at St. Louis, June 12, 1820, elected David Barton President, and William G. Pettus Secretary, and formed a constitution which was laid before Congress early in the session of 1820–21. The constitution contained a provision by which it was made the duty of the Legislature to pass laws "to prevent free

negroes or mulattoes from coming into and settling in this State, under any pretext whatever." This was considered by some of the members as a direct violation of the Constitution of the United States, which they had sworn to support. Missouri, which had thus far contended for every inch of ground in her passage from a territorial to a State government, was now again the subject of contention, of debate, and finally of compromise. The "restrictionists" and "anti-restrictionists" were again in hostile array, and the old contest was renewed, and carried on with a spirit which in many instances was quite unjustifiable, the effects of which are still perceptible in the enmity existing between even the descendants of the contending parties. After several months' time and thousands of dollars had been squandered in debating and wrangling over the subject, a resolution was finally passed through both Houses of Congress, which provided that "no law shall be passed by which any citizen of either of the States of this Union shall be excluded from any of the privileges and immunities to which such citizen is entitled under the Constitution of the United States." In compliance with the specification of the act, the Legislature of Missouri, on the 21st of June, 1821, passed a solemn public act of assent to the fundamental provision contained in the above resolution, which was transmitted to the President, who, on the 10th of August, 1821, issued his proclamation, and gave Missouri her place, as the twenty-third State in the Union.*

The following are the particulars respecting the location of the seat of government, and the erection of the Capitol building:—

An act providing for the location of the permanent seat of government for the State of Missouri, (approved November 16, 1820.)

Sec. 1.—That John Thornton, from the County of Howard, Robert Gavy Watson, from the County of New Madrid, John B. White, from the County of Pike, James Logan, from the County of Wayne, and Jesse B. Boon, from the County of Montgomery, in the State of Missouri, shall be and they are hereby appointed Commissioners for the purpose of selecting a suitable place for the location of the permanent seat of government for said State, etc.

An act supplementary to an act, entitled an act providing for the location of the permanent seat of government for the State of Missouri, (approved 28th June, 1821.)

Sec. 1.—That Daniel Morgan Boon, of the County of Gasconade, be and he is hereby appointed a Commissioner for the purpose of

* Beck's Gazetteer, edition of 1823.

selecting a suitable place for the location of the permanent seat of government of this State, to fill the vacancy occasioned by the death of Jesse B. Boon, one of the Commissioners heretofore appointed, etc.

By the provisions of an act entitled "an act fixing the permanent seat of government, (approved 31st December, 1821,) the following described lands were selected for the permanent seat of government: "The fractional sections six, seven, and eight, the entire sections seventeen and eighteen, and so much of the north part of sections nineteen and twenty as will make four sections, all in fractional township 44 north and range 11 west of 5th principal meridian." These lands had been previously selected by the Commissioners, and by a resolution approved 28th of June, 1821, the Governor was required to give notice to the Surveyor of Illinois, and Missouri, and Arkansas, and also to the Register of the proper land office, of said selection.

By the provisions of "an act supplementary to the act fixing the permanent seat of government," (approved 11th January, 1822,) the same Commissioners were required to lay off a town on said sections to be called "City of Jefferson." And all the said lands were to be laid off into lots, large or small.

An act to provide for the building of a Capitol and for other purposes, (approved 2d February, 1837.)

Sec. 1.—"The Governor, Secretary of State, Auditor of Public Accounts, Treasurer, and Attorney-General, or any three of them, shall be ex-officio Commissioners, whose duty it shall be to superintend the building of the Capitol," etc.

Above the principal entrance to the Capitol is the following inscription:—

Erected A.D. 1838.

L. W. Boggs, Governor.
P. G. Glover, Secretary of State.
H. H. Baber, Auditor Public Accounts.
W. B. Napton, Attorney-General.
A. McClellan, Treasurer.

Commissioners.

S. Hill, Architect.

POPULATION OF MISSOURI.

FROM 1821* TO 1860, INCLUSIVE.

COUNTIES.	1821.	1830.	1840.	1850.	1856.	1860. White.	1860. Free Col'r'd	1860. Slaves.	Present County-seats.
Adair	.....	.....	.....	2,351	6,535	7,890	4	97	Kirksville.
Andrew	.....	.....	.....	9,434	10,944	11,011	24	1,071	Savannah.
Atchison	.....	.....	.....	1,678	3,394	4,404	.....	59	Rockport.
Audrain	.....	.....	1,949	3,508	6,130	6,569	.....	1,351	Mexico.
Barry	.....	.....	.....	.....	4,929	7,761	.....	247	Cassville.
Barton	.....	.....	.....	.....	.....	1,816	.....	21	Lamar.
Bates	.....	.....	.....	3,669	5,702	6,787	.....	453	Butler.
Benton	.....	.....	4,205	5,026	6,789	8,528	15	599	Warsaw.
Bollinger	.....	.....	.....	.....	5,080	5,958	.....	238	Dallas.
Boone	3,692	8,859	13,561	14,981	17,248	14,494	69	5,035	Columbia.
Buchanan	.....	.....	6,237	12,976	15,813	21,918	43	1,714	St. Joseph.
Butler	.....	.....	.....	1,616	2,151	2,125	3	20	Poplar Bluff.
Caldwell	.....	.....	1,458	2,317	3,626	4,931	1	234	Kingston.
Callaway	1,797	6,159	11,765	13,828	15,906	13,135	59	4,579	Fulton.
Camden	.....	.....	.....	2,338	3,287	4,631	.....	214	Linn Creek.
Cape Girardeau	7,852	7,445	9,359	13,916	12,349	12,734	66	1,533	Jackson.
Carroll	.....	.....	2,423	5,448	9,663	8,757	7	1,067	Carrollton.
Carter	.....	.....	.....	.....	new	1,062	11	16	Van Buren.
Cass	.....	.....	4,693	6,090	6,813	8,851	9	1,009	Harrisonville.
Cedar	.....	.....	.....	3,360	5,395	6,442	.....	211	Stockton.
Chariton	1,426	1,780	4,746	7,537	9,211	9,851	53	2,079	Keytesville.
Christian	.....	.....	.....	.....	5,946	5,325	.....	224	Ozark.
Clarke	.....	.....	2,846	5,527	.....	9,318	21	455	Waterloo.
Clay	.....	5,388	8,282	10,332	.....	9,584	27	3,550	Liberty.
Clinton	.....	.....	2,724	3,786	.....	6,704	5	1,144	Plattsburg.
Cole	1,028	3,023	6,754	9,286	10,138	8,724	.....	990	Jefferson City.
Cooper	3,483	5,904	10,484	12,968	15,082	13,591	33	3,871	Booneville.
Crawford	.....	1,721	3,561	6,397	7,672	5,650	2	182	Steelville.
Dade	.....	.....	.....	4,247	6,061	6,735	13	347	Greenfield.
Dallas	.....	.....	.....	3,648	4,620	5,800	.....	114	Buffalo.
Daviess	.....	.....	2,736	5,295	7,940	9,248	9	358	Gallatin.
De Kalb	.....	.....	.....	2,075	.....	5,101	6	137	Maysville.
Dent	.....	.....	.....	.....	3,207	5,542	.....	156	Salem.
Douglass	.....	.....	.....	.....	.....	2,459	.....	2	Vera Cruz.
Dunklin	.....	.....	.....	1,232	2,616	4,535	2	152	Kennett.
Franklin	1,928	3,484	7,515	11,022	12,918	16,478	42	1,604	Union.
Gasconade	1,174	1,545	5,330	5,000	6,900	8,456	3	90	Hermann.
Gentry	.....	.....	.....	4,247	8,781	11,922	1	120	Albany.
Greene	.....	.....	5,372	13,009	14,124	11,568	12	1,667	Springfield.
Grundy	.....	.....	.....	3,005	4,989	7,909	6	287	Trenton.
Harrison	.....	.....	.....	2,446	7,649	10,621	.....	25	Bethany.
Henry	.....	.....	4,726	4,052	6,642	8,620	1	1,244	Clinton.
Hickory	.....	.....	.....	2,330	3,312	4,618	7	195	Hermitage.
Holt	.....	.....	.....	3,955	5,404	6,281	.....	309	Oregon.
Howard	7,321	10,854	13,108	13,971	15,085	10,120	71	5,886	Fayette.
Howell	.....	.....	.....	.....	.....	3,200	15	36	West Plains.
Iron	.....	.....	.....	.....	.....	5,433	.....	290	Ironton.
Jackson	.....	2,823	7,612	14,001	17,071	19,166	80	3,945	Independence.
Jasper	.....	.....	.....	4,223	5,223	6,607	27	340	Carthage.
Jefferson	1,838	2,592	4,296	6,928	8,507	8,861	17	487	Hillsboro'.
Johnson	.....	.....	4,471	7,464	10,880	13,080	5	1,900	Warrensburg.

* A State census was taken in September, 1821, at which time there were twenty-five counties in the State, and a population of 70,617; of whom 11,234 were slaves.

Counties.	1821.	1830.	1840.	1850.	1856.	1860. White.	1860. Free Col'r'd	1860. Slaves.	Present County-seats.
Knox	.....	.....	.....	2,895	5,484	1,553	5	203	Edina.
Laclede	.....	.....	.....	2,498	4,559	4,861	33	307	Lebanon.
Lafayette	1,340	2,912	6,815	13,691	17,070	13,763	69	6,608	Lexington.
Lawrence	.....	.....	.....	4,851	7,613	8,772	5	285	Mount Vernon.
Lewis	.....	.....	6,640	6,577	9,959	10,419	10	1,252	Monticello.
Lincoln	1,674	4,059	7,449	9,422	11,620	11,362	25	2,864	Troy.
Linn	.....	.....	2,245	4,060	6,567	8,555	19	578	Linneus
Livingston	.....	.....	4,325	4,219	6,495	6,833	22	607	Chillicothe.
McDonald	.....	.....	.....	2,236	3,533	3,976	13	72	Pineville.
Macon	.....	.....	6,034	6,566	8,285	13,710	4	661	Bloomington.
Madison	1,907	2,371	3,395	6,001	6,256	5,338	20	436	Fredericktown.
Maries	.....	.....	.....	.....	3,248	15,783	78	2,839	Vienna.
Marion	.....	4,837	9,623	12,241	13,144	4,875	7	64	Palmyra.
Mercer	.....	.....	.....	2,690	5,603	9,286	.....	24	Princeton.
Miller	.....	.....	2,282	3,834	4,024	6,076	2	238	Tuscumbia.
Mississippi	.....	.....	.....	3,123	4,241	3,762	.....	946	Charleston.
Moniteau	.....	.....	.....	6,005	6,402	10,202	.....	745	California.
Monroe	.....	.....	9,505	10,543	11,353	11,865	44	3,024	Paris.
Montgomery	2,032	3,902	4,371	5,489	7,263	7,363	20	1,628	Danville.
Morgan	.....	.....	4,407	4,648	5,767	7,624	18	650	Versailles.
New Madrid	2,444	2,350	4,554	5,233	4,317	3,886	14	859	New Madrid.
Newton	.....	.....	3,790	4,270	6,720	8,904	90	494	Neosho.
Nodaway	.....	.....	.....	2,118	4,772	5,136	1	127	Maysville.
Oregon	.....	.....	.....	1,432	3,405	3,428	.....	20	Thomasville.
Osage	.....	.....	.....	6,705	6,493	7,650	4	336	Linn.
Ozark	.....	.....	.....	2,296	4,185	4,834	44	43	Rockbridge.
Pemiscot	.....	.....	.....	.....	2,090	2,919	12	260	Gayoso.
Perry	1,599	3,349	5,760	7,220	7,995	9,266	16	735	Perryville.
Pettis	.....	.....	2,939	5,143	6,638	7,516	5	1,982	Georgetown.
Phelps	.....	.....	.....	.....	.....	5,097	.....	114	Rolla.
Pike	2,677	6,129	10,646	13,609	16,139	14,165	50	4,123	Bowling Green.
Platte	.....	.....	8,913	16,926	18,482	15,119	63	3,313	Platte City.
Polk	.....	.....	8,449	6,185	7,583	10,030	12	512	Bolivar.
Pulaski	.....	.....	6,529	4,010	3,034	3,835	1	56	Waynesville.
Putnam	.....	.....	.....	.....	5,603	9,209	.....	31	Unionville.
Ralls	1,684	4,375	5,670	6,151	6,594	6,154	17	1,758	New London.
Randolph	.....	2,924	7,198	9,440	10,530	8,838	8	2,606	Huntsville.
Ray	1,789	2,657	6,553	10,402	12,256	12,050	.....	2,026	Richmond.
Reynolds	.....	.....	.....	1,849	2,399	3,260	11	49	Centerville.
Ripley	.....	.....	2,856	2,830	3,884	3,618	4	78	Doniphan.
St. Charles	4,058	4,320	7,911	11,454	13,428	14,970	.....	2,186	St. Charles.
St. Clair	.....	.....	.....	3,556	4,986	6,256	6	574	Osceola.
St. François	.....	2,366	3,211	5,606	5,797	7,549	91	889	Farmington.
Ste. Genevieve	3,181	2,186	3,148	5,215	6,158	7,199	117	577	Ste. Genevieve.
St. Louis	8,190	14,125	35,979	105,064	144,977	182,857	2,139	3,825	St. Louis.
Saline	1,176	2,873	5,258	8,843	12,633	10,120	11	4,901	Marshall.
Schuyler	.....	.....	.....	3,287	4,691	6,682	.....	39	Lancaster.
Scotland	.....	.....	.....	3,785	7,535	9,170	15	166	Memphis.
Scott	.....	2,136	5,974	3,182	3,792	4,744	.....	505	Benton.
Shannon	.....	.....	.....	1,202	1,476	1,972	.....	6	Eminence.
Shelby	.....	.....	3,056	4,252	5,158	6,943	23	752	Shelbyville.
Stoddard	.....	.....	3,153	4,289	5,470	7,942	7	189	Bloomfield.
Stone	.....	.....	.....	.....	2,177	2,333	.....	16	Salina.
Sullivan	.....	.....	.....	2,938	5,108	9,235	1	103	Milan.
Taney	.....	.....	3,264	4,375	4,291	3,540	5	82	Forsyth.
Texas	.....	.....	.....	2,313	3,493	6,071	2	43	Houston.
Vernon	.....	.....	.....	.....	3,673	4,920	.....	142	Nevada City.
Warren	3,741	.....	4,253	5,861	5,410	7,782	9	1,019	Warrenton.
Washington	1,614	6,784	7,213	8,815	10,157	8,034	24	896	Potosi.
Wayne	.....	3,264	3,403	4,418	4,829	5,086	9	238	Greenville.
Webster	.....	.....	.....	.....	6,719	6,886	.....	220	Marshfield.
Wright	.....	.....	.....	3,387	3,109	4,440	.....	66	Hartsville.
Total.....113	79,647	140,455	383,702	682,907	900,000	1,055,934	3,974	112,889	

EDUCATION.

The accomplished principal of the St. Louis Normal School says "it is the public schools that touch the life of the nation, and upon their character and success depends the stability of this government."

The law for the organization, support, and government of common schools, now just being put into operation in Missouri, accords with the true spirit of progress, and when fully inaugurated will, in some respects, place our educational system in advance of many of the older States. "Public schools, like laws, are silent in the midst of arms." During the war, in several counties the schools were broken up, the teachers forced to flee for their personal safety, and the school-houses burnt or injured beyond repair. The State Superintendent, in his last annual report (1867), says:

"The arts of industry are reclaiming the waste places; the communities in certain parts of the State, reinforced by immigration from the neighboring labor States, are replacing the school-house and employing the professional teacher, educated under the ideas of patriotism, as well as in the methods of free school instruction. I wish to restrict this latter remark to those portions of our State where the friends of freedom predominate. * * * It is a notable fact that all the counties in the State which show the predominance of Free State power are clamorous for free schools. * * * They are rapidly placing themselves under the development of the school law, and demand, as among the prime elements of their newly-organized communities, substantial primary and high schools, to be under the control of intelligent officers and teachers. On the other hand, it is equally notable that those counties in the State which have proven to be under the control of the same influences which made them intolerant before the war and traitorous during it, are either wholly negligent of their public school interests, or bitterly hostile to them."

By a careful perusal of the following table, the reader will readily decide the educational as well as the political status of each county, on the basis stated above by the State Superintendent.

The capital of the Public School Fund on the first of October, 1866, was $1,004,071.98, having increased $200,167.14 during the preceding two years.

The present school law had been in operation but about four months when the report was made from which the main features of this table were compiled, hence its results are scarcely notable. The number and influence of public schools will very rapidly increase, as this new law is appreciated and enforced.

TABLE—*Exhibiting the Population in* 1860; *number and kind of School-houses; number of Children; number in Schools; number and kind of Schools, and the Radical and Conservative Vote in each County, in March,* 1866.

Name of County.	Population in 1860.	School-houses.			Total No. of Children in County.	No. of Col'd Chil'n in County.	No. in Schools.	Schools.			Seminaries	Colleges.	Schools for the Color'd.	Official Vote, 1866.	
		Brick.	Frame.	Log.				Prim'y	High.	Select.				Radicals.	Conservatives.
Adair	8,436	.....	22	29	8,937	41	2,574	30	.....	6	.....	.....	.....	727	135
Andrew	10,949	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,127	247
Atchison	4,578	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	580	8
Audrain	6,909	.....	18	3	2,761	260	725	21	.....	8	2	.....	1	243	278
Barry	7,738	.....	1	5	1,252	10	118	5	.....	.....	.....	.....	.....	196	95
Barton	1,796	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	50
Bates	6,765	1	12	5	1,887	47	544	17	.....	.....	.....	.....	.....	216	95
Benton	8,460	.....	3	23	2,592	88	825	15	.....	.....	.....	.....	.....	599	254
Bollinger	7,126	4	1	17	1,707	2	193	.....	.....	.....	.....	.....	.....	262	138
Boone	14,399	5	14	9	4,522	671	188	19	.....	.....	.....	.....	.....	178	636
Buchanan	21,799	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,438	1,284
Butler	2,837	.....	1	1	1,230	4	86	4	.....	.....	.....	.....	.....	37	83
Caldwell	4,810	.....	16	12	2,317	108	1,457	22	.....	7	.....	.....	.....	489	205
Callaway	12,895	.....	2	11	921	119	?	50	.....	.....	.....	.....	.....	*163	1,463
Camden	4,769	.....	.....	15	1,792	67	880	10	1	9	.....	.....	.....	338	60
Cape Girardeau	13,961	10	26	36	4,334	272	1,561	52	.....	14	4	1	5	800	365
Carroll	8,692	1	11	12	3,147	218	1,223	25	.....	.....	.....	.....	.....	683	435
Carter	1,200	.....	.....	.....	359	3	.....	.....	.....	.....	.....	.....	.....	10	.....
Cass	8,781	.....	20	6	3,054	108	533	5	.....	11	.....	.....	.....	392	333
Cedar	6,420	.....	2	19	1,771	27	1,361	15	.....	3	1	.....	.....	349	22
Chariton	9,672	.....	10	14	4,327	753	1,205	30	.....	10	1	.....	.....	563	583
Christian	5,262	.....	5	14	2,417	61	1,265	20	.....	.....	.....	.....	.....	*500	50
Clarke	11,216	3	21	6	4,819	54	1,939	.....	2	.....	.....	.....	.....	1,032	193
Clay	9,525	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	126	111
Clinton	6,685	.....	13	3	2,762	257	1,051	20	2	10	.....	.....	.....	444	309
Cole	8,645	.....	3	32	3,401	160	1,142	24	4	5	.....	.....	.....	814	672
Cooper	13,528	3	17	14	5,024	820	2,172	50	6	20	.....	4	.....	894	497
Crawford	5,640	.....	.....	29	2,899	47	402	25	1	2	1	.....	.....	320	384
Dade	6,721	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	451	17
Dallas	5,777	.....	6	35	2,448	29	1,282	60	1	3	.....	.....	.....	486	117
Daviess	9,248	.....	22	37	4,048	151	4,497	61	1	3	.....	.....	.....	790	434
De Kalb	5,081	.....	21	8	2,702	38	524	18	1	6	.....	.....	.....	387	200
Dent	5,498	.....	.....	7	1,870	10	?	19	3	.....	.....	.....	.....	146	96
Douglass	2,414	.....	7	5	1,407	7	118	2	.....	1	.....	.....	.....	286	6
Dunklin	4,855	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62	187

Franklin	16,465	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,330	982
Gasconade	8,642	1	1	41	4,104	54	2,136	40	.....	3	.....	.....	.....	888	264
Gentry	11,862	1	12	17	2,422	16	1,623	53	.....	1	.....	.....	.....	571	185
Greene	11,509	.....	30	26	7,785	618	3,432	60	2	30	.....	.....	1	1,073	378
Grundy	7,596	2	16	31	4,267	71	2,197	61	2	5	.....	.....	.....	804	103
Harrison	10,601	1	1	28	4,901	14	2,226	63	.....	15	1	.....	1	*1,069	291
Henry	8,620	.....	15	8	2,147	102	669	50	.....	15	1	.....	1	477	254
Hickory	4,503	.....	1	14	1,801	14	726	16	.....	.....	.....	.....	.....	395	52
Holt	6,241	1	18	14	2,945	48	1,982	40	.....	1	.....	.....	1	762	45
Howard	9,986	1	10	16	3,847	782	429	15	.....	.....	.....	.....	.....	204	1,011
Howell	3,133	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	63	10
Iron	5,529	.....	1	.....	458	35	355	1	1	4	.....	.....	.....	192	109
Jackson	18,899	2	8	12	4,869	372	180	33	1	12	1	1	.....	903	952
Jasper	6,533	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	280	6
Jefferson	9,763	1	6	30	2,993	161	957	40	.....	6	2	2	.....	753	778
Johnson	12,743	1	28	13	6,162	594	1,138	39	1	7	.....	.....	2	817	307
Knox	8,436	3	35	20	3,581	85	2,327	58	1	3	.....	.....	.....	639	345
Laclede	4,875	.....	2	13	2,003	46	363	.....	.....	.....	.....	.....	.....	267	279
Lafayette	13,688	3	15	3	3,381	676	590	10	.....	4	.....	.....	.....	503	653
Lawrence	8,559	1	4	21	4,809	58	1,056	11	.....	6	.....	.....	.....	488	188
Lewis	10,983	6	15	18	4,892	428	1,572	37	1	20	4	1	2	775	504
Lincoln	11,347	3	12	52	5,021	585	1,561	33	2	20	.....	.....	.....	481	483
Linn	8,509	.....	25	27	4,665	234	1,424	15	.....	7	.....	.....	1	750	446
Livingston	6,812	.....	20	24	4,309	436	2,933	40	3	9	.....	.....	2	687	486
Macon	13,673	.....	13	26	6,969	512	720	20	4	.....	.....	.....	1	963	667
Madison	5,179	.....	.....	13	1,343	24	284	10	.....	2	.....	.....	.....	175	177
Maries	4,830	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*75	225
Marion	15,732	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	816	639
McDonald	3,957	.....	2	9	930	13	191	5	.....	1	.....	.....	.....	122	3
Mercer	9,274	.....	15	23	3,838	35	2,117	45	.....	5	.....	.....	.....	886	195
Miller	6,572	.....	2	35	2,902	70	1,726	31	.....	.....	.....	.....	.....	453	50
Mississippi	3,849	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	411
Moniteau	9,375	3	13	30	4,278	260	1,500	27	1	2	.....	.....	.....	691	449
Monroe	11,722	1	39	20	5,319	718	?	4	.....	3	1	1	1	165	234
Montgomery	8,061	.....	17	17	3,250	407	1,583	22	3	11	1	1	.....	573	302
Morgan	7,545	1	8	21	2,665	153	939	20	.....	5	.....	.....	.....	453	369
New Madrid	3,863	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	360
Newton	8,842	.....	1	8	2,149	60	?	.....	.....	.....	.....	.....	.....	361	24
Nodaway	5,123	1	23	8	2,739	11	1,283	45	.....	2	.....	.....	.....	710	254
Oregon	2,983	.....	1	26	2,390	51	720	21	1	7	.....	.....	.....	.....	103
Osage	7,623	.....	1	1	108	.....	80	2	.....	.....	.....	.....	.....	562	626
Ozark	2,361	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*74	2
Penniscot	2,682	.....	.....	2	293	58	50	.....	.....	2	.....	.....	.....	1	166

* The vote of Callaway, Christian, Harrison, Maries, and Ozark Counties rejected for want of registration. Parker's majority for State Superintendent of Public Schools exceeds 20,000.

TABLE—*Exhibiting the Population in* 1860, *etc.*—Continued.

Name of County.	Population in 1860.	School-houses.			Total No. of Children in County.	No. of Col'd Chil'n in County.	No. in Schools.	Schools.			Seminaries	Colleges.	Schools for the Color'd.	Official Vote, 1866.	
		Brick.	Frame.	Log.				Prim'y	High.	Select.				Radicals.	Conservatives.
Perry	8,366	1	1	41	3,294	145	1,619	27	.....	13	.....	.....	.....	583	542
Pettis	7,504	1	22	5	3,384	480	945	19	1	10	.....	.....	.....	691	476
Phelps	5,628	.....	1	7	1,950	60	118	.....	.....	.....	.....	.....	.....	327	283
Pike	14,302	5	12	23	5,098	650	1,582	13	2	7	.....	.....	.....	984	1,244
Platte	14,981	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	652	764
Polk	9,468	.....	7	39	4,234	111	2,291	34	1	7	.....	.....	.....	688	192
Pulaski	3,779	.....	.....	13	1,241	8	157	4	.....	1	.....	.....	.....	120	163
Putnam	9,176	1	13	38	3,956	5	2,623	63	.....	.....	.....	.....	.....	1,112	39
Ralls	6,788	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	217	278
Randolph	8,777	.....	14	23	2,362	314	1,461	19	.....	11	.....	.....	.....	184	1,171
Ray	12,038	1	23	33	6,173	549	3,032	48	2	.....	.....	.....	.....	588	508
Reynolds	3,135	.....	.....	13	1,244	13	323	12	.....	13	.....	.....	.....	14	138
Ripley	3,666	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	.....
St. Charles	14,313	5	2	8	5,142	413	1,630	50	.....	3	.....	2	3	1,244	933
St. Clair	6,299	1	1	12	1,998	56	?	12	.....	.....	.....	.....	.....	324	34
St. François	6,292	.....	6	2	1,688	63	34	8	.....	.....	.....	.....	.....	272	324
Ste. Genevieve	7,323	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	175	395
St. Louis, First District	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,728	6,510
" Second "	184,313	42	12	.....	73,381	2,712	21,800	43	1	47	9	3	12	5,264	2,774
Saline	9,800	1	24	5	5,059	816	1,670	37	.....	6	.....	.....	.....	441	357
Schuyler	6,658	.....	7	27	3,091	.....	1,748	33	.....	6	.....	.....	.....	382	154
Scotland	8,742	.....	29	15	3,896	45	265	45	.....	.....	.....	.....	.....	661	544
Scott	4,730	.....	.....	7	1,226	59	451	8	.....	1	.....	.....	.....	267	227
Shannon	2,271	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shelby	6,565	2	28	13	3,402	315	2,268	44	1	4	.....	.....	.....	468	200
Stoddard	7,659	.....	.....	3	273	4	117	.....	2	.....	.....	.....	.....	118	148
Stone	2,384	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	109	86
Sullivan	9,095	.....	6	37	3,916	11	2,201	85	.....	18	1	.....	.....	748	262
Taney	3,189	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	106	8
Texas	6,009	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89	124
Vernon	4,712	.....	15	12	1,697	33	593	11	.....	12	.....	.....	.....	63	181
Warren	4,234	.....	.....	.....	3,006	422	.....	.....	.....	.....	.....	.....	.....	791	310
Washington	4,550	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	297	578
Wayne	2,687	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117	90
Webster	3,476	.....	5	26	2,763	92	1,113	18	1	4	.....	.....	.....	407	260
Worth	.....	.....	7	28	1,894	956	?	15	.....	9	.....	.....	.....	280	228
Wright	2,261	.....	2	19	2,763	92	1,133	18	1	1	1	.....	.....	192	54

RAILWAYS IN MISSOURI.

The system of trunk lines projected in Missouri, when completed, will form a network, which, with the branch lines, will traverse every portion of the State. Since, in this great railway era, speed in transit is the desideratum, and as it has been clearly demonstrated that railways are the most successful civilizers, as well as the greatest producers of business, it becomes Missouri to maintain her position among her sister States, by multiplying these iron arteries of commerce.

Railroad lines are projected through the most populous and wealthy counties in the State—counties, some of which possess inexhaustible beds of mineral wealth, and others that are well settled by farmers, whose industry and perseverance are exhibited by the superior manner in which they cultivate their broad, fertile fields, and the abundant yield they gather as a reward. These artificial channels are much needed for the transportation of our valuable home products to a reliable market; and none but those who are familiar with the capabilities of the State and of its unparalleled mineral and agricultural wealth, can form an adequate estimate of the immense treasures which lie hidden in the earth. Some of the finest portions of the State are yet comparatively undeveloped, and, indeed, almost unknown, because of their remoteness from any great thoroughfare. Few portions of the West are more productive, or possess better water, or a more genial climate than Southwestern Missouri, not merely in agricultural lands but in lead, marble, coal, petroleum, etc. All these now remain undeveloped because of the expense and delay necessary to take these products to market. For stock growing, also, this is one of the finest portions of the West; yet, owing to its present isolated position, the population is sparse, and will continue so until facilities are afforded for the transportation of their agricultural and mineral productions to market. One of the immutable laws of trade is that where the demand is greater than the supply, the price of the article is enhanced, and the improved facilities for intercourse bring to our very doors the markets of the extreme eastern and southern borders of our country. When this Atlantic and Pacific road is completed, it will furnish an unbroken route from St. Louis to the Pacific, under the one management. This route is claimed to be five hundred miles shorter from New York to the Pacific than any other; running from St. Louis in a direction a little south of west—opening up in Southwest Missouri

as fine a section of country for agricultural or mining purposes as can be found in the Union—to the Canadian River in the Indian Territory; thence westerly to Albuquerque, on the Rio del Norte, about forty miles south of Santa Fé, and thence along the thirty-fifth parallel north latitude, crossing the Colorado at the head of navigation, and entering California in the vicinity of Los Angelos, then along the valleys to San Francisco, crossing no mountains, and showing at no point a grade exceeding seventy feet to the mile, and passing so far south as never to be inconvenienced by snow. Another advantage claimed for this route is the brief time required to build it, owing to the avoidance of mountain work and delays of winter, and the ability to tap it at three points, viz., the Arkansas and Colorado Rivers, and by a short branch from San Diego, in California—thus making eight points from which to build the road.

The rich lead region in Southwest Missouri, some of the best mines in which are owned by the company, will alone, it is thought, furnish a paying freight business.

The St. Louis, Iron Mountains and Southern Railroad has been purchased by parties who will speedily extend it to the Mississippi River at Belmont, opposite Columbus, Ky., and to Helena or Memphis. The Southern trade is too extensive to depend upon river navigation entirely—low water and ice cannot be permitted to check the demands of commerce. Independent of the immense *through* passenger and freight business of this road, it will, with its branches, furnish an outlet to market for the richest mineral region, probably, in the world. This road will be rapidly extended to meet the wants of the people of Southern Missouri, and of the trade south from St. Louis.

The North Missouri Railroad is being extended to the Iowa State line, there to be taken up by the people of Iowa and Minnesota, and rapidly completed—a through line to St. Paul. A western line is also being built from Allen, on this road, to the Missouri River.

We trust the day is not far distant when the more important of these roads will be completed, bringing every portion of the State within a day's travel of the Father of Waters, and of the City of St. Louis; when the shrill neigh of the iron horse shall be heard in the most remote corners of the State, and when the rattle of his tread shall reverberate along the frontier, with thousands of intelligent and industrious settlers following in his wake, who shall "make the wilderness to blossom as the rose."

DISTANCES BY RAILROADS IN MISSOURI.

PACIFIC RAILROAD.

Stations.	*Miles.*
St. Louis to	
Cheltenham	6
Laclede	8
Webster	10
Kirkwood	14
Barrett's	17
Maramec	19
St. Paul	24
Glencoe	27
Eureka	30
Allentown	32
Pacific	37
Gray's Summit	41
Labadie	45
South Point	53
Washington	55
Newport	62
Miller's Landing	67
Berger	75
Hermann	81
Gasconade	88
Chamois	100
St. Aubert	105
L'Our's Creek	109
Bonnett's Mill	113
Osage	117
Jefferson City	125
Scott	132
Lookout	140
California	150
Tipton	163
Syracuse	168
Otterville	176
Smithton	182
Sedalia	189
Dresden	196
Knobnoster	208
Warrensburg	218
Holden	233
Krigsville	237
Pleasant Hill	249
Lee's Summit	261
Independence	274
Kansas City	283

Two through trains to Leavenworth City, making direct connection at Wyandotte with the Union Pacific Railway for Lawrence, Topeka, Manhattan, and Fort Riley. Stages leave Warrensburg for Lexington every morning: leave Sedalia for Springfield, Bolivar, and Warsaw daily on arrival of trains. Stages leave Tipton every evening for Booneville. Passengers taking the morning train from St. Louis connect at Pacific with the train daily for Rolla and intermediate stations. Stages leave Rolla every evening for Springfield.

ATLANTIC AND PACIFIC RAILROAD.

Stations.	*Miles.*
St. Louis to	
Cheltenham	5
Laclede	8
Webster	10
Kirkwood	14
Maramec	19
St. Paul	24
Glencoe	26
Eureka	30
Allentown	32
Pacific Junction	37
Catawissa	41
Calvey	44
Moselle	48
St. Clair	55
Stanton	65
Sullivan	71
Bourbon	77
Harrison	82
Cuba	90
Knob View	98
St. James	103
Dillon	108
Rolla	113

ST. LOUIS, IRON MOUNTAINS AND SOUTHERN RAILROAD.

Stations.	*Miles.*
St. Louis to	
Lami Street	1
Carondelet	6
Ivory's	8
Jefferson Barracks	10
Grimsley's	14
Jefferson	18
Kimmswick	21
Windsor Harbor	21
Sulphur Springs	23
Illinois	26
Peevly	27
Porines	30
Hematite	35
Victoria	39
De Soto	42
Tunnell	47
Blackwell's	50
Cadet	57
Mineral Point*	61
Hopewell	65
Irondale	69
Blairsville	74
Iron Mountain	81
Middle Brook	83
Pilot Knob	86

Stages connect with trains at Iron Mountain and Pilot Knob for important interior towns and the South.

HANNIBAL AND ST. JOSEPH RAILROAD.

Stations.	*Miles.*
Hannibal to	
Barkley	10
Palmyra†	14
Monroe	30
Hunnewell	37
Shelbina	47
Clarence	59
Carbon	67
Hudson	70
Bevier	75
Callao	79
Bucklin	94
St. Catharine	100
Brookfield	104
Laclede	109
Chillicothe	130
Utica	135
Breckinridge	145
Hamilton	156
Cameron	171
Osborn	177
Stewartsville	185
Easton	194
St. Joseph	206

* Branch road from Mineral Point to Potosi, 3 miles.
† From West Quincy to Palmyra Junction, 13 miles.

NORTH MISSOURI RAILROAD.

Stations.	*Miles.*
St. Louis to	
Bellefontaine	4
Jennings	6
Ferguson	9
Graham	11
Bridgton	13
Section 16	16
Ferry Landing	19
St. Charles	20
Dardenne	29
O'Fallon	33
Perruque	37
Wentzville	42
Millville	48
Wright's	51
Warrenton	57
Jonesburg	67
High Hill	72
Florence	76
Montgomery	81
Wellsburg	89
Martinsburg	94
Jeffstown	100
Mexico	107
Centralia	121
Sturgeon	129
Renick	139
Allen	146
Jacksonville	157
Hudson	168
Bevier	173
Callao	177
Bucklin	192
St. Catharine	198
Brookfield	202
Laclede	207
Chillicothe	228
Utica	233
Breckenridge	
Hamilton	254
Cameron	269
Osborn	275
Stewartsville	288
Easton	292
St. Joseph	304

TABLE OF RIVER DISTANCES.

DISTANCES FROM NEW ORLEANS TO ST. LOUIS.

Stations.	*Miles.* UP	DOWN
New Orleans to		1278
Carrolton	7	1271
Red Church	26	1252
College	60	1218
Convent	62	1216
Donaldsonville	78	1200
Plaquemine	110	1168
Baton Rouge	130	1148
Port Hudson	153	1125
Waterloo	159	1119
Bayou Sara	165	1113
Mouth Red River	205	1073
La. and Miss. Line	207	1071
Fort Adams	217	1061
Natchez	277	1001
Rodney	322	956
St. Joseph	327	951
Grand Gulf	340	938
Hard Times	345	933
New Carthage	371	907
Warrenton	389	889
Vicksburg	401	877
Mouth Yazoo River	414	864
Milliken's Bend	427	851
Lake Providence	477	801
Skipwith's Landing	487	791
Louisiana Line	498	780
Princeton	500	778
Grand Lake	504	774
Greenville	547	731
Columbia	557	721
Gains and Gutrs	575	703
Bolivar	605	673
Napoleon	620	658
Mouth White River	645	633
Helena	728	550
Mouth St. F. R	738	540
Commerce	780	498
Mississippi Line	796	482
Memphis	818	460
Randolph	878	400
Ashport	918	360
Hale's Point	938	340
Arkansas Line	944	334
Point Pleasant	993	285
Tennessee Line	998	280
New Madrid	1003	275
Hickman	1040	238
Columbus	1057	221
Cairo	1077	201
Commerce	1112	166
Cape Girardeau	1127	151
Tower Rock	1152	126
Chester	1193	85
Ste. Genevieve	1213	65
Jefferson Barracks	1268	10
St. Louis	1278	

DISTANCES FROM ST. LOUIS TO ST. PAUL.

Stations.	*Miles.*	
St. Louis to		
Alton	25	
Cap au Gris	40	65
Clarksville	37	102
Louisiana	12	114
Hannibal	30	144
Quincy	20	164
Lagrange	12	176
Canton	8	184
Alexandria & Warsaw	20	204
Keokuk	4	208
Montrose	12	220
Nauvoo	3	223
Fort Madison	9	232
Pontoosuc	6	238
Dallas	2	240
Burlington	15	255
Oquawka	15	270
Keithsburg	12	282
New Boston	7	289
Port Louisa	10	299
Muscatine	18	317
Rock Island / Davenport	30	347
Le Claire & Port Byron	18	365
Princeton & Cordova	6	371
Camanche	10	381
Albany	3	384
Clinton	6	390
Fulton and Lyons	2	392
Sabula	20	412
Savannah	3	415
Belleview	23	438
Galena	12	450
Dubuque & Dunleith	20	470
Welles' Landing	15	485
Cassville	15	500
Guttenburg	10	510
Clayton	12	522
McGregor	11	533
Prairie du Chien	3	536
Lansing	30	566
De Soto	5	571
Victory	5	576
Badaxe City	11	587
Browneville	12	599
La Crosse	12	611
Richmond	16	627
Trempeleau	5	632
Winona	13	642
Fountain City	10	655
Mount Vernon	11	666
Minnieski	3	669
Alma	15	684
Warbashaw	9	693
Read's Landing	3	696
North Pepin	5	701
Lake City	7	708
Redwing	18	726
Prescott	30	756
Hastings	3	759
St. Paul	32	791
St. Anthony	14	805

DISTANCES ON THE MISSOURI RIVER FROM ST. LOUIS TO FORT BENTON.

Stations.		*Miles.*
St Louis to		
Jefferson City		174
Booneville	58	232
Glasgow	32	264
Brunswick	35	299
Lexington	75	374
Kansas City	82	456
Leavenworth City	39	495
Atchison	37	532
St. Joseph	33	565
Nebraska City	175	740
Council Bluffs	53	792
Omaha	14	807
Florence	15	822
Little Sioux River	72	894
Sioux City	116	1010
Vermillion River	140	1150
James River	47	1197
Yancton	104	1201
Bonhomme Island	16	1217

Stations.		*Miles.*
St. Louis to		
Mouth Niobrarah	22	1239
Yancton Agency	32	1271
Fort Randall	14	1285
White River	106	1391
Crow Creek or Usher's Landing	94	1485
Fort Sully	45	1530
Fort Pierre	5	1535
Big Cheyenne	55	1590
Mouth Moreau	100	1690
Grand River	31	1721
Beaver River	85	1806
Cannon Ball River	30	1836
Fort Rice	10	1846
Hart River	50	1896
Old Fort Clark	65	1961
Fort Berthold	59	2020
Little Missouri	30	2050
White Earth River	85	2135

Stations.		*Miles.*
St. Louis to		
Mouth Yellowstone	135	2270
Fort Union	5	2275
Milk River	350	2625
Round Butte	135	2760
Dophan's Rapids	152	2912
Mouth Maria	218	3130
Fort Benton	45	3175
Fort Benton to		
Silver City		150
Prickly Pear		170
Last Chance		171
Deer Lodge City		180
Deer Lodge Diggings		210
Virginia City		270
Bannock City		300
Gallatin		350
Bosman		351

ELEVATIONS IN MISSOURI.

The elevations of the following places will give a general idea of the surface of the southern portion of the State. The first column shows the elevation above tide-water at Mobile Bay; the second column above the City Directrix at St. Louis.

St. Louis Directrix	372 feet	
Base of Pilot Knob	909	537 feet
Top of Pilot Knob	1490	1118
Marshfield, Webster County	1462	1090
New Madrid	947	575
Granby, Newton County	1030	668
Springfield	1452	1080
Ohio City	272	100 below

A high "divide" extends from Green County, through Webster, Wright, Texas, Dent, Iron, and St. François Counties. The western part of this high region is a broad, rolling table-land; but the eastern end is broken into numerous knobs, hills, and ridges, as seen at Pilot Knob, which is only twenty-eight feet higher than Marshfield, on the table-lands of the western end.

CLIMATE.

Situated in the center of the United States possessions, lying between thirty-six and forty-one degrees north latitude, and between eighty-nine and ninety-six degrees west longitude, this State is free from the sudden and trying changes experienced by residents nearer the sea-coast in the same latitudes. The difference in temperature, however, varies from 8° below zero in winter, to 110° above in summer. The seasons in their progress are gradual and uniform, subject to few or no abrupt transitions. The air is pure and salubrious.

The following table is the result of twenty-five years' observations in St. Louis, by Dr. George Engelmann, and being centrally located in the State (latitudinally speaking), will give a correct idea of the general climate of the State. Some allowance should be made, however, for the effect of buildings, smoke, etc., which affect the temperature of a populous city somewhat.

OBSERVATIONS AT ST. LOUIS FROM 1834 TO 1859, INCLUSIVE.

Month.	Mean Temp.	Lowest Mean.	Highest Mean.
January	32·7	19·3	40·5
February	34·5	20·8	44·1
March	44·5	27·5	56·7
April	56·2	44·4	66·7
May	66·0	60·5	69·3
June	74·2	70·3	78·3
July	78·8	72·5	83·5
August	76·2	71·0	81·5
September	69·3	64·4	76·1
October	55·7	48·4	62·8
November	43·0	34·7	51·8
December	33·5	25·0	40 5

55·4—Mean of all the years.

The opinion has been advanced by some meteorologists that the temperature of the United States is annually becoming lower; the mean temperature of 1859 was 55·4, the same as the mean of all the twenty-five years above given.

The following is the result of observations by JAMES. W. EVANS, Esq., during six years, taken at Big River, in St. François County. "R" indicates rain, and "N.R." no rain.

MONTHS.	1837.		1838.		1839.		1840.		1841.		1842.	
	R.	N.R.	R.	N.R.	R.	N.R.	R.	N.R.	R.	N.R.	R.	N.R.
January.....	5	26	5	26	12	19	8	23	9	22	4	27
February.....	8	20	9	19	6	22	8	21	2	26	9	19
March.....	10	21	10	21	8	23	11	20	8	23	7	24
April.....	11	19	9	21	16	14	10	20	9	21	11	19
May	14	17	11	20	15	16	14	17	6	25	13	18
June.....	18	12	18	12	14	16	8	22	12	18	11	19
July	11	20	5	26	10	21	9	22	7	24	8	23
August.....	11	20	7	24	3	28	12	19	1	30	4	27
September	10	20	2	28	5	25	5	25	3	27	3	27
October.....	7	24	9	22	5	26	9	22	6	25	4	27
November.....	10	20	11	19	9	21	10	20	9	21	6	24
December.....	11	20	7	24	8	23	3	28	9	22	5	26
Total.....	126	239	103	262	111	254	107	259	81	284	85	280

The following is the order of the leafing of the several trees, shrubs, etc., as recorded by J. W. EVANS, Esq.

NAME.	1839.	1840.	1841.	1842.
Gooseberry.....	March 14	Feb. 28	March 19	March 1
Elder.....	" 19	March 5	.....	" 6
Buckeye.....	" 26	" 8	March 26	" 15
Wild Cherry.....	" 27	.....	.....	" 23*
Apple-tree.....	" 29	March 18	March 29	" 25*
Sugar Maple.....	" 30	.....	" 30	" 18*
White Maple.....	April 14	.....	.....	April 25
Peach.....	" 3	.....	.....	" 9*
Willow.....	" 12	.....	.....	" 18
Red Bud.....	" 16	April 14	.....	" 16*
Plum.....	" 17*	March 29*	.....	" 16*

* In bloom.

GRAPE CULTURE IN MISSOURI.

BY G. C. SWALLOW, STATE GEOLOGIST.

THERE is, perhaps, no department of husbandry in which cultivators find so much difficulty and meet with so many failures as in the cultivation of the vine; and yet, while some fail, it is equally true that others meet with eminent success. It is quite obvious that the most of those who have failed in their efforts must attribute their failures to the want of adaptation, in their modes of culture, to the habits and wants of the vine; as others, on the same soil and under the same sun, have been most successful.

Notwithstanding the true principles of grape culture are so little understood by the community at large, no department of agriculture has been more carefully investigated — more distinctly defined and reduced to scientific principles. Since Virgil wrote his masterly treatise upon the habits and cultivation of the vine, the principles which should govern its culture have been within the reach of all who would investigate the structure of this plant, and learn the soil and climate adapted to its perfect development. And, indeed, it could scarcely be otherwise, as the vine has occupied so prominent a position in the husbandry of almost all the enlightened nations of ancient and modern times. Since Noah planted a vineyard the vine has followed the progress of husbandry and civilization throughout India, Arabia, Palestine, and Southern Europe. It holds an important place in the history of those seats of ancient civilization and progress. The "vine-clad hill" occupied a conspicuous position in every landscape, and the juice of the grape had its place at the social board and ruled the joys of the banquet hall. While it held so important a position among the nations, its value led the ablest minds to investigate its habits and deduce the best modes of culture from the experience of the many engaged in the pleasant pursuit. Solomon investigated the properties of the vine, and Virgil gave so excellent a treatise upon its habits and culture that the investigations and experience of the last two thousand years have added but little to the knowledge then possessed. Since, then, the habits of the vine, and the modes of culture best adapted to it have been so carefully determined and so thoroughly established by the experience of the last four thousand years, it only remains for the cultivators of our times to investigate the modes of culture so long and so successfully practiced in

India and the countries bordering upon the Mediterranean; to inquire how far the varieties there cultivated and the culture there adopted will succeed in other localities; to determine whether some new varieties may not succeed better in other climates and soils; and what modifications of culture will secure the highest degree of success in the various soils and climates to which we would introduce the vine.

It is obvious that the success of the grape depends upon the mutual adaptation of both soil and climate. In places where the soil has all the requisite properties, the climate may be such as to prevent full success; as in many parts of New England, where the climate is too cold, and in England, where it is too moist. In many localities in Southern Europe the soil is such as to prevent the full success of the vine, though the climate is all that could be desired.

Soil.—According to Virgil* and the best authors who have followed him, the soil should be *warm, light, dry, and rich in alkalies and alkaline earths,* especially *potash, soda, lime, and magnesia.* The best vines have been grown† upon soils of this description, and when any of these qualities have been wanting, the most skillful vine-growers have carefully supplied them by artificial means. Hence Virgil directs to place "porous stones and rough shells" in the trenches; the stones and shells to loosen the soil and perfect the drainage, and the shells to supply the defect of lime. The vine has ever succeeded the best, other things being equal, in a calcareous soil. The best vineyards upon the Rhine, the Ohio, and the Missouri are upon soils rich in lime; and, according to D'Orbigny, the wines from such soils in France are more lively and spirituous.

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* Geor., lib. ii. lines 217–221 and 262—"Optima putri arva solo."

† The great vine at Windsor Park was planted about fifty years ago. "In 1850," says Professor Lindley, "it produced two thousand large bunches of magnificent grapes, filled a house one hundred and thirty-eight feet long and sixteen feet wide, and had a stem two feet and nine inches in circumference. The border in which it grows is warm, dry, light, shallow." The most famous claret vineyards of France are on the peninsular of Medoc, north of Bordeaux, where the soil is dry and warm, and so full of pebbles that the entire mass seems to be made up of them. A recent traveler thus describes the superior grape soil:—"Trellises of scarce two feet high carry the vines, and neither foliage nor the clusters can conceal the harsh, pebbly soil, which you would declare, if you were bred in a grain-growing country, to be utterly worthless. There are vineyards upon this gravel-bank of Medoc which have the look only of a waste of white silicious pebbles; others again seem to be of slaty debris, and nowhere could you thrust your staff in the earth more than an inch or two. Yet upon this gravelly mass the sun lies warmly and kindly. For hours after sunset these pebbles, which have been basking all day in the light, retain their heat, and through all the night give it to the little rootlets of the vine."

The chemical composition of a plant also gives us sure indications of the mineral ingredients of the soil required for its perfect development. The following table, from Johnston's Agricultural Chemistry, contains the composition of five vines grown on five different soils. The result shows most conclusively what mineral substances are demanded for the perfection of the vine.

Substances.	By Leibfrauen.	By Weinsheimer.	Primary Rocks. Gratz.	Mountain Limestone. Gratz.	Mica Slate.	Mean.
Potash	17·32	25·24	34·13	24·93	26·41	25·60
Soda	28·50	2·74	8·03	7·31	8·79	11·07
Lime	29·75	40·75	32·67	37·59	33·47	34·85
Magnesia	9·78	7·47	4·66	7·12	9·16	7·64
Oxide of iron	4·12	1·52	0·16	0·24	0·19	1·25
Phosphoric acid	5·20	18·87	16·35	19·55	16 87	15·37
Sulphuric acid	1·96	2·88	2·16	2·37	2·44	2·36
Chlorine	1·82	0·53	0·50	0·35	0·25	0·68
Silica	1·55	.....	1·45	0·62	2·48	1·22
Total	100·00	100·00	100·11	100·08	100·06	100·04
Percentage of ashes in dry twigs	2·885	2·689	2·525	2·25	2.325	2·525

These analyses show that potash, soda, lime, magnesia, and phosphoric acid enter largely into the composition of the vine, and that grapes will succeed best on soils rich in those materials. The other ingredients are such as are found in nearly all soils, and may be left out of our investigations.

It is a well-established principle of vegetable science that *lime* may supply the place of *soda* and *potash*, in part at least, in some plants. The following analysis of vines from two localities show this to be true of the vine also :—

	I.	II.
Alkalies	45·82	27·98
Lime	29·75	40·75

If, therefore, soda and potash be deficient in a soil, their place may be partially supplied by lime, should it exist in sufficient quantities.

Climate.—The success of the grape on the islands and the shores of the Mediterranean show their adaptation to a climate in which the winters are short and mild, and the summers are temperate and equable. In the Ionian Islands, where the grape attains great perfection, it is never exposed to pinching cold or burning heat, or to any very sudden changes from one to the other. But the great profusion and excellence

of the grapes in India, at Candahar and Cabul, the sunny home of the grape, indicate an ability to reach perfection in spite of sudden changes from extreme cold to burning heat. "In no part of the world," says Lindley, "are the grapes more delicious than in Candahar and Cabul;" and yet the traveler speaks of the *bitter cold wind* and *blazing fires at night*, and the *burning sun* by day in March; and the sun's heat at 140° in May, where the grapes ripen as early as June.

We may conclude, then, that the grape will, under favorable circumstances, reach the greatest perfection though exposed to sudden changes and extremes of heat and cold.

Having ascertained the conditions of soil and climate best adapted to the successful culture of the vine, it has been my aim, during the progress of the geological survey of Missouri, to determine how far these conditions are fulfilled in Missouri; to what extent and with what success the vine may be cultivated in our State, and the advantages to be derived from its cultivation. In order to secure the most accurate data for our conclusions, our investigations have been directed to the following subjects:—

1. The characters and habits of all our native vines and the soils on which they succeed best have been carefully noted.

2. Five persons* have been appointed to make meteorological observations. One at Springfield, in the Southwest; one at Cape Girardeau, in the Southeast; one at Palmyra, in the Northeast; one at St. Joseph, in the Northwest; and one at Columbia, in the centre, in the valley of the Missouri River. These observers have been supplied with the very best instruments, and they have made and recorded their observations according to the plan adopted by the Smithsonian Institution.

3. The experience of our most successful vine-growers has been collected, and the results carefully compared with the conclusions derived from our examination of the climate, soils, and wild vines of the State.

4. The soils of the State have been carefully observed, and the varieties collected and submitted to a most skillful chemist for full and accurate analyses.

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* It gives me great pleasure to bear testimony to the disinterested labors of those who have so faithfully observed and recorded the meteorological phenomena at the stations above named. Our State will be under many obligations to the Rev. G. P. Comings, of St. Paul's College, Palmyra; Rev. James Knoud, of St. Vincent's College, Cape Girardeau; J. A. Stephens, Esq., Springfield; E. B. Neely, A.M., of the St. Joseph High School; and Miss M. B. Hill, at Columbia, who have made the observations at their several localities.

Native Grapes.—The growth and fruit of our native vines give us most important indications of the adaptation of our soil and climate to the cultivation of the grape. The following species have been observed; the growth, habits, and fruit of each variety have been carefully examined.

1. Vitis Labrusca, *Linn.* *Fox Grape* of the Northern States.

This vine is abundant in all parts of the State. It attains to a very large size* in our rich alluvial bottoms and on our best upland soils; but the vines of a smaller size, which are found on the poorest soils in the State, produce much the best grapes. Those which grow upon the dry ridges, on the declivities of the bluffs, (especially those of the magnesian limestone,) and on the talus of debris at their bases, exhibit a healthy, firm growth, and produce an abundance of fine fruit. The grapes found in these localities are larger, and the pulp is more juicy and palatable.

Many well-known and excellent varieties of Grapes now in cultivation were derived from this species. The *Isabella, Catawba, Schuylkill,* and *Blands* are the most esteemed.

2. Vitis Æstivalis, *Michx.* *Summer Grape.*

This, like the preceding, is found in all parts of the State, and is doubtless the largest of all our vines. It is one of the most striking objects in our magnificent upland forests; while the stem, like a huge cable, hangs suspended from the limbs of the largest trees, the branches, clothed in rich foliage, and often loaded with fruit, hang in graceful festoons over the highest boughs. But the vines growing on the thin soils of our limestone ridges and bluffs, and on the loose debris at their bases, where they are more exposed to the air and the sun, produce a greater abundance of the best fruit.

3. Vitis Cordifolia, *Michx.* *Winter* or *Frost Grape.*

This vine is widely diffused through the State: it is, perhaps, the largest of all our vines; but its fruit is not so large as the fox or the summer grape.

Its fruit is small and acerb.

4. (*Var. of the former, Gray.*) Vitis Riparia, *Michx.* *River Grape.*

This grape is partial to the alluvial soil along the margins of our streams. It grows to a large size.

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* This vine often attains a diameter of ten inches, ascends the loftiest trees, and spreads its branches over their highest boughs.

5. VITIS VULPINA, *Linn.* *Muscadine* of the West, and *Fox Grape*, according to Elliott, in the Southeastern States.

It is found in the southern part of the State. I saw several vines in Pemiscot and Dunklin Counties. It grows very large and produces abundantly. Its fruit is very much esteemed. The cultivated *Scuppernong Grape* is a variety from this species.

A small vine with the fruit like this grows in the southwestern counties.

6. VITIS BIPINNATA, *Michx.*

This plant was observed in Cape Girardeau and Pemiscot Counties.

7. VITIS INDIVISI, *Willd.*

This vine abounds in the central and western counties.

From this list it will be seen that Missouri possesses nearly all the native grapes of our country, save one, the *Vitis Caribœa?* (D. C.) of California. The vines are so abundant and so large as to form an important and conspicuous part of every copse and thicket throughout the entire State. They are everywhere present, lending grace and beauty to every landscape, and indicating with prophetic certainty that the day is not far distant when the purple vineyards will cover our hills, the song of the vine-dresser fill the land with joy, and the generous juice of the grape will improve our moral, intellectual and physical powers.

Experience of our Vine-dressers.*—Several vine-dressers in our State have been engaged in the cultivation of the grape during the last twelve or fourteen years. Their success has been fully equal to their expectations; and they are full of high hopes of the most useful and profitable results, even of entire and permanent success. Their experience in cultivating the vine has led them to the same conclusion that we have deduced from our scientific examinations of the soil, climate, and native vines, viz.: *that the vine can be cultivated with entire success, in favorable localities, in all parts of the State.*

It should be borne in mind that these results have been derived mostly from vineyards in the valley of the Missouri and Mississippi Rivers, which are not, by far, the most favorable localities in the

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* I am indebted to Mr. William Haas, of Boonville, Mr. Geo. Husmann, of Hermann, Mr. Frederick Munch, of Marthasville, and Mr. Joseph Stuby, of Hamburg, for valuable information respecting the cultivation of grapes in our State.

State; for the "mildew" and the "rot," the most formidable obstacles they have had to contend with, may be partially or entirely obviated in localities where the atmosphere and soil are not so densely charged with moisture. The "rot," says one of our most successful vine-dressers, Mr. Haas, "attacks the berries when the soil is in a wet condition, in July and August. It is most severe on the low and wet parts of the vineyard." Mr. Husmann says, "the principal cause, all are agreed, is an excess of moisture about the roots, and damp, moist weather." Now the larger part of our vineyards are located upon a *stiff, cold, clayey subsoil*, which of necessity retains the excess of moisture and produces the injurious results. This evil may be oviated by thorough draining and preparation of the soil; or, what is better, by selecting some of the millions of acres in the southern part of the State, where the soil is *warmer* and *lighter*, and richer in the ingredients most favorable to the vine, and where the subsoil is so porous as to permit a free passage to the excess of moisture.

The *mildew* appears in June; and all agree that it is caused by "*foggy, damp*, and *hot weather*, accompanied by *mists*," which is much more prevalent in the valleys of our large rivers than on the table-lands of the south.

The characters of the two regions under comparison show most conclusively that the excess of moisture in the valleys must be considerable and permanent. These valleys are covered with numerous and extensive lakes and sloughs, and forests of rank growth and vast extent, besides the broad rivers which flow through them; while the table-lands are almost destitute of lakes and ponds, and but partially covered by a very sparse and much less vigorous growth of timber. And, besides, they occupy an elevation of several hundred feet above the valleys.

No fears, therefore, need be entertained that these obstacles will prevent the entire success of vine culture in Missouri, should our atmosphere even continue as moist as at present. But we may expect much improvement in this respect, as it is fully established by past experience that the settlement of a country and the opening of a soil to cultivation lessen the amount of rain and moisture in the atmosphere.

Notwithstanding the many difficulties our vine-dressers have had to contend with, and notwithstanding some of their vineyards are not, to say the least, in the most favorable localities in the State, their success has been very flattering.

The vineyards of Boonville have yielded the present season about

6000 gallons, worth $12,000. Five acres gave a clear profit of $2000, or $400 per acre. Mr. Haas made 1550 gallons from three acres.

The vintage of Hermann was about 100,000 gallons, from less than 200 acres. At $1 per gallon, which is less than the value, it will give a profit of at least $400 per acre, or of $80,000 on the 200 acres in cultivation. One small vineyard at Hamburg, Mr. Joseph Stuby's, yielded over 1000 gallons per acre.

The entire cost of vineyards, preparing the soil, setting and training the vines till they come into bearing, varies from $200 to $300 per acre; annual cost of cultivation after, $50 to $60 per acre; ten per cent. on first cost, $20 to $30 per acre; total expense for each year, $70 to $90 per acre. So that an income of $100 per annum for each acre is sufficient to pay the interest on the first cost and the expense of cultivation.

Judging from the statistics before me, I would suppose all our vineyards have yielded an average of at least 250 gallons per acre since 1849, which, at an average price per gallon of $1 60, would give an annual income of $400, and a yearly profit of $300 per acre. So that the vine-dresser, even in the poorest seasons, can scarcely fail of a handsome profit; while in good years his gains will far surpass those derived from any other department of husbandry. But the profits of our most successful cultivators have been much greater. M. Poeshel, of Hermann, is said to have made over 400 gallons per acre for the last ten years, and an annual profit of more than $500 for each acre.

Such are the favorable results legitimately derived from the experience of our vine-dressers, in their early efforts in a new country, with a soil and climate unknown to the cultivators of the grape. All must admit that they are most satisfactory. Even if our climate does not become more dry, if no more improvements are made in the modes of culture, and if no more favorable localities are obtained, grape culture must increase very rapidly, and become an important element in our agricultural and commercial interests.

Climate.—It will be impossible to give, in the few pages allotted to me in this communication, the results of our meteorological observations. It must suffice to state in general terms, that the extremes of heat and cold are not so great as in some of the best grape-growing regions; and that the atmosphere in the southern part of the State is sufficiently dry. The results, in short, present but one very objection-

able feature. There are occasional changes of temperature so great and sudden as to prove somewhat injurious to the grape at certain stages of its growth. But it should be observed that these changes are not so marked in the high table-lands of the south and west as in the north and in the valleys of the Missouri and Mississippi, where our vineyards are located; and, even where most objectionable, they are not so great as in India, and other grape-growing districts of the Old World.

That portion of Southern Missouri, extending from Newton County in the southwest to St. Genevieve in the southeast, usually represented as the eastern extremity of the Ozark Mountains, is in fact a table-land varying from 1000 to 1500 feet above the ocean. In the west it is sufficiently undulating to be well drained, while in the east it sometimes rises into ridges and knobs of moderate elevation. From this table-land the country descends by moderate slopes in every direction. On the northern slope are the head-waters of the Sac, Pomme de Terre, Niangua, and Gasconade, flowing into the Missouri; on the east, the Maramec and the Big, flowing into the Mississippi; on the south, the waters of the St. François, the Current, and the White, with its tributaries, descending toward Arkansas; and Spring River and Shoal Creek on the western slope.

The valleys of the numerous streams which flow from this table-land are at first but little depressed below the general level; but the farther they descend, the deeper and wider they become, until they expand into broad alluvial bottoms, bounded by bluffs more or less precipitous. The fountains are numerous, bold, and pure; the streams clear and rapid.

The surface of these table-lands is undulating, with no mountains or arid plains to disturb the equable and agreeable temperature which usually prevails at that elevation under the 37th parallel of north latitude. There are no swamps or overflowed lands from which vapors and noxious exhalations can arise to render the air damp and unhealthy. As these facts plainly indicate, the summers are long, temperate, dry, and salubrious,* and the winters short and mild. It possesses the clear, brilliant skies of Italy, and the dry, bracing air of the western prairies.

Soil.—Nearly all the soils of Missouri possess all the ingredients necessary to the complete development of the vine; but some of them are too heavy, wet, and cold, unless improved by artificial means.

* According to the census report of 1850, this is one of the most healthy regions in the country.

This is true to some extent of those on the bluffs of the Mississippi and Missouri, where nearly all the vineyards of our State are located. These soils are based upon the bluff formation, where it contains more clay and less lime than in the western counties, which possess our best soils.

Analysis of Soil from the Bluffs of Boone County, by Dr. Litton.

	No. 12, A.	No. 12, B.	No. 12, C.
Water expelled by drying at 150° C.	0·4105	0·6558	0·8030
Organic matter and water not ex'd at 150° C.	3·0957	2·6049	3·8901
Silica, etc., insoluble in hydrochloric acid	90·1420	90·8063	85·0571
Soluble silica	0·1384	0·1475	0·2187
Alumina	3·0654	2·9346	4·7672
Peroxide of iron	2·0553	2·0590	3·8814
Oxide of manganese	a trace	a trace	a trace
Lime	0·2086	0·1242	0·4722
Magnesia	0·3423	0·2088	0·6581
Potash	0·3368	0·2121	0·3895
Soda	0·1828	0·2925	0·1220
Phosphoric acid	0·0560	0·0346	0·0556
Sulphuric acid	0·0035	0·0508	0·0099
Chlorine	0·0000	0·0000	0·0276
Total	100·0373	100·1311	100·3524

No. 12, A, was collected from 2 to 6 inches below the surface; No. 12, B, from 10 to 12; and No. 12, C, from 18 to 20 below the surface on a high ridge.

This soil is very similar to those upon which the vineyards of Boonville, Hermann, and Hamburg are located; and it produced an abundance of large and excellent grapes on small vines of the *Vitis labrusca*. The superior native grapes growing upon this soil, and the succes of the vineyards above named, prove its adaptation to the vine. Its greatest defect is a capacity to hold and retain an excess of water; which must be remedied by trenching and a proper admixture of vegetable matter, sand, pebbles, and broken limestone. This labor, however, may be avoided by selecting some of the millions of acres in Southern and Central Missouri, the soils of which are already prepared, as if by design, to invite the vine-dresser to possess and cultivate them. (See the sixth and seventh varieties of soil above described.)

Analysis of a Magnesian Limestone Soil from the Southern Bluffs of Callaway County, by Dr Litton. Soil No. 14.

Water expelled by heating to 150° C.	1·1700
Organic matter and water not driven off at 150° C.	9·6299
Silica, etc., insoluble in hydrochloric acid	54·2600
Soluble silica	0·1639
Alumina	10 8588
Peroxide of iron	2·5186
Manganese	a trace
Lime	8·0720
Magnesia	1·6609
Potassa	1·6378
Soda	0·3442
Carbonic acid	10·1111
Sulphuric acid	0·0605
Phosphoric acid	0·0950
Chlorine	0·0053
Total	100 5880

This soil is all that could be desired for the culture of the grape; it contains an abundance of all the mineral substances which enter into the composition of the vine, as shown above by its analysis. While it is *warm, light,* and *dry,* it contains large quantities of magnesia and vegetable matter or humus, giving it great capacity for absorbing and retaining a sufficient quantity of moisture, even in the droughts of summer. This is a fair representation of the soils on the magnesian limestone ridges and slopes throughout Central and Southern Missouri. These slopes and ridges occupy millions of acres now deemed worthless, which are in fact by far the most valuable lands in the State for the cultivation of the grape; especially is this true of those located upon the southern highlands, away from the vapors and sudden changes of our large rivers and their broad valleys.

The magnesian limestone series occupies a large portion of Southern Missouri, and is made up of magnesian limestones, sandstones, and porous chert, which are usually overlaid with thin beds of reddish-brown marly clays. The sand, lime, magnesia, and alumina, derived from the decomposition of these rocks, together with the abundance of vegetable matter and the alkalies derived from the fires which annually overrun this country, combine to form a soil* *light, dry, warm,* and rich in *potash, soda, lime, magnesia,* and all the other mineral ingredients needed to render it fertile, and suitable in an eminent degree for the culture of the vine. In many places this soil is underlaid with a sufficient quantity of pebbles and fragments of porous chert to constitute a most thorough system of drainage;

* See preceding analysis, No. 14.

while in others the fragments of chert are disseminated through the soil in such quantities as to injure it somewhat for ordinary cultivation,* but giving precisely the preparation so highly recommended by Virgil and later authors, and the best cultivators of the grape. It is true that the native vines do not grow so large and sappy on this as on the deep, damp soils of the State; but they are nevertheless strong and healthy, and produce finer clusters of larger and better grapes. This improvement was particularly observed in the *muscadine* and the *summer grapes.*

This variety of soil also extends over a large portion of the counties on both sides of the Osage, and over the southern part of Boone, Callaway, Montgomery, and Warren, on the north side of the Missouri, occupying in all an area of some 15,000,000 acres. Of these, at least 5,000,000 acres might be selected in the most desirable localities and devoted to vineyards, without encroaching upon the lands most desirable for other departments of agriculture. And so far as we can judge from the characteristics of soil and climate, and the indications of the native vines, these 5,000,000 acres in the highlands of Southern Missouri present rare inducements to the vine-dresser—such a combination of favorable circumstances as will not fail to attract the attention of those who would engage in this most pleasant and profitable department of husbandry. And so important will be the results, that every effort should be put forth to hasten the time when these 5,000,000† acres shall be covered with flourishing vineyards, giving profitable employment to 2,000,000 people, yielding more than 1,000,000,000 gallons of wine, and an annual profit, at the lowest estimate, of $500,000,000. And what is still more important, the pure, nourishing juice of the grape would take the place of the vile, maddening compounds used under the names of wine and brandy; drunkenness would give place to sobriety, and our people, nourished by the grape and its pure wines, would become as robust and hardy as they are now daring and indomitable.

Natural Terraces.—The bluffs of the numerous streams in Southern Missouri, and in the valley of the Osage, usually slope back into knobs and ridges, which are frequently surrounded by numerous natural terraces so regular and uniform that they appear like the

* Those who travel over the flint ridges of Southern Missouri will be struck with the resemblance of the soil, filled with fragments of chert, to that of the famous Medoc vineyards, described in the note on page 63.

† France has about 5,000,000 acres in vineyards. They yield about 925,000,000 gallons of wine, besides the 95,000,000 gallons distilled into brandy, and give profitable employment to 2,000,000 of people, mostly women and children.

work of human hands. These terraces are produced by the decomposition of the strata of magnesian limestones which form the bluffs. Their height varies from one to six feet, and the width of the top from two to twelve, according to the angle of the slope and the height of the terrace. Their surfaces are nearly level, and usually covered with a light, warm, and rich soil, containing fragments of chert and the decomposing limestone, all wonderfully prepared by nature for the planting of vineyards. These terraces generally surround high, open ridges and knobs, exposed to the free circulation of the dry atmosphere of the region under consideration. We have observed but one objection to their use for vineyards. In some places the soil does not appear sufficiently deep to secure the vine against the effects of droughts. But, as an offset to the want of depth, it always contains large proportions of carbonate of magnesia and humus, which give a great capacity for absorbing and retaining moisture; as these substances possess this capacity to a greater degree than any of the other ingredients of our soils. And besides, the thinnest soils on these terraces sustain a vigorous growth of prairie grasses, flowers, shrubs, and vines, which produce the finest quality of grapes in great profusion.

Caves.—There are numerous spacious caves in all parts of this interesting country. The temperature of those measured, ranges between 50° and 60° Fah. Many of them would make most excellent wine cellars, as their temperature is sufficiently low and uniform to prevent that acidity to which the wines of all temperate latitudes are predisposed. It should also be borne in mind that this is the richest mineral region in the Mississippi valley. It abounds in mines of lead, zinc, copper, cobalt, and mountains of iron, and quarries of marble; and, besides, its agricultural resources are sufficient to sustain a population of many millions.

These facts respecting the *native vines*, the *climate*, the *experience of our vine-growers*, and the *soil*, clearly prove the capacity of Missouri to become the great vine-growing region of our continent. They should encourage those noble spirits who have so faithfully devoted their labor and their money to promote this important department of husbandry in our midst; for the time is not far distant when the "*poor flint* ridges" and *terraced slopes* of Southern Missouri will be as valuable for vineyards as some of them are now for their rich mineral deposits. The vine-clad hills of the beautiful Niangua will vie in wealth with the leaden veins of Potosi and Granby, and the iron mountains of Madison and St. François.

AN ESSAY ON THE CULTURE OF THE GRAPE IN MISSOURI.

By George Husmann, Hermann, Mo.

THE VINEYARD.

Position and Soil.—The selection of a suitable location is very important. The best situations are generally our hill-sides, with an eastern, southeastern, or southern exposure. The freer the location, and the more exposed to the draught of our prevalent winds in summer, the better. The slopes adjoining small water-courses should be particularly avoided, as they are peculiarly subject to frosts in winter and spring, and also, generally, to mildew and rot.

The soil best suited for the vine is a dry, calcareous loam, with a porous subsoil. Any soil retentive of moisture (for example, wet, stiff clay, or wet, spongy land of any kind) should be avoided, as the grapes are much more subject to mildew and rot on such soils, and the vines are apt to make a rampant, unhealthy growth.

Preparation of the Ground.—The ground should be trenched with the spade to the depth of two to two and a half feet, and the top soil turned under. The best time for this is in autumn or early winter, as the soil will then be mellowed by the frosts. Mr. Poeshel, one of our most successful wine-growers, throws in a layer of corn stalks, brush cut with the leaves in summer, etc. at the bottom of the trench. This serves as a partial underdrain, and also as a manure, and is an excellent plan. Wet spots may be drained by gutters filled with loose stones, covered with flat ones, and then filled up with earth. Surface-draining may be done by small ditches in every sixth or eighth row, running parallel with the hill-side, and leading into a main ditch at the end or middle of the vineyard. Steep declivities must be terraced or benched; as this is, however, very expensive, they ought to be avoided.

Planting.—Opinions differ much among wine-growers as to the proper distance in planting. Of course, the kind to be planted, and more or less vigor of growth, must be taken into consideration. For the Catawba, I would think six by six, or four by eight feet, the proper distance, the rows being eight feet apart, and the vines four feet in the rows. For Norton's Virginia, six by seven feet; and for Herbemont, six by eight feet, the rows being six feet, and the vines eight feet apart in the rows, as this is a very rampant grower. This will give free circulation of air between the rows, one of the great preventives against mildew and rot, and also gives the roots ample space

to spread. Much of the quality of the fruit also depends on this, as a free circulation of sun and air will, of course, materially improve the fruit.

Much diversity of opinion also exists as to planting with cuttings or with rooted vines. My experience is decidedly in favor of the latter, for the following reasons:—1st. A vine ought to have its principal roots at least a foot below the surface of the ground, but a cutting will often strike nearly all its roots near the surface, and will then never make a good, healthy vine; whereas, in planting rooted vines, the roots can be placed where they ought to be. 2d. Some cuttings will always fail to grow, even if two are planted in the same place; the vineyard will need much replanting, and the second planting will not make as good plants as the first. Where no rooted vines can be had, I would advise planting cuttings in a nursery bed, in the following manner: Plant them in moist, sandy, well-pulverized soil, in rows three feet apart, and three inches apart in the rows, in a slanting position, one foot deep with the lower end, with the upper eye just above the ground, and keep them free from weeds during the summer. If the season is favorable, they will make fine strong plants for next spring's planting. The cuttings should be made of sound, well-ripened young wood, and contain at least four eyes or joints; cut them off close below the lower eye and about an inch above the upper; if a heel of the old wood is left attached, so much the better. They should be cut in the fall, tied in bundles, and buried in the ground until wanted for planting. This refers, of course, only to such varieties as Catawba, Isabella, and other kinds which will grow from cuttings. Many of our most valuable kinds, such as Norton's Virginia, Delaware, and others, will not grow from cuttings, and must be propagated by layering, grafting, etc. As a general rule, those varieties which have very firm, hard wood, and but little pith, will not propagate readily from cuttings.

In planting the vineyard, lay the ground off with a line, and put down a stick sixteen to eighteen inches long, where each vine is to grow. Dig a hole eighteen inches deep in a slanting direction; then, having pruned your vine to two buds of the young wood, lay it in, and take care to spread the roots properly; then throw in a shovelful of rich, well-pulverized surface-soil about the roots, and fill up, taking care to pulverize all thoroughly, and leave one bud above the ground. Of course, the planting should be done when the ground is dry enough to be light and mellow.

Treatment of the Young Vine.—The first summer after planting, nothing is necessary but to keep the ground free from weeds, and the

surface well pulverized, either with the hoe, cultivator, or plow. Should the vines grow very strong, they may be tied to the stakes used for marking off the ground, and only one shoot be allowed to grow. The next winter stakes should be provided. Here, again, opinions differ, some preferring simple stakes, others trellis. The latter is, undoubtedly, the best, and also the cheapest, if well made in the following manner: Take cedar posts, where they can be had, if not, mulberry, walnut, locust, white oak, or any other durable timber, split up to about three inches in diameter and seven feet long. Point them on one end, and make holes with a crowbar two feet deep in the spaces between the vines, setting the stakes firmly into these. To these stakes nail three laths, one about two feet from the ground, the others eighteen inches apart. They can be split of black oak, one inch broad by half an inch thick. Provided the stakes are made of durable timber, such a trellis will last from ten to fifteen years; is much more convenient for tying the vines and training the young wood to them, and will prove the cheapest in the end, although it costs more at first, as it will not need resetting, as the small stakes do every spring.

The next spring cut the young vines back to two eyes, and also cut off all the upper roots one or two joints below the surface of the ground. Should the vines be very strong, two shoots may be left to grow. Keep them neatly tied to the trellis with straw or bark, and pinch off all suckers and laterals to one joint or leaf beyond the leading shoots. The vineyard must be kept clean from weeds, using the plow or cultivator between the rows, and for the first hoeing around the vines use the two-pronged German hoe, and hoe deep, turning the ground well; for all subsequent hoeings use a common field or garden hoe, and only scrape off the weeds lightly. In the fall unfasten the vines as they are not so liable to injury by frost as when kept tied to the trellis. The second spring after planting, cut the weakest vines back to three buds, and those that are strong enough may be cut, one row to two eyes, and the other to eight or ten for bearing. However, the wish to have a crop should not lead, as it too frequently does, to taxing the vines beyond their strength, as it will injure them for a long time. Treat them the same way as the summer before, with the exception of the canes left for bearing, which must be tied to the trellis in the spring, and all the shoots on it showing fruit should be pinched back, before they bloom, to just above the last bunch of grapes; and the suckers, which afterward appear, to one joint or leaf.

After the third year the vine may be considered as established, and

a full crop expected. It is in pruning now that the nicest judgment as to the capabilities of each vine for bearing is required, as the success of the vintner in raising a good crop, and also preserving his vines in a healthy condition, depends principally on this and judicious summer pruning. In pruning, the vintner should have a twofold object in view. First, to raise a good crop of well-developed and well-ripened fruit; and, secondly, to get a supply of strong, well-ripened young wood, to give a good crop next season. If he prunes too long, he taxes the vine beyond its strength, and he will have an immense crop of small, worthless fruit, which will not ripen well, and will, consequently, not make a good wine; the young wood will be weak and not ripen well, will often be killed by the frost the coming winter, and his vines will languish, and often die. If, on the other hand, he prunes too short, excessive growth will be the consequence, and mildew and rot will follow, as the superabundant growth will exclude all circulation of air. There is a certain medium point which the observant vintner will soon learn to find—to tax each vine to its full capability, but not beyond that—when both objects will be accomplished, and a vineyard under such treatment will improve every year and last a long time. It is an impossibility, in a treatise of this kind, to give the length to which each vine ought to be pruned; as this depends on the condition of the vine, the variety of grapes, (as some varieties require much longer pruning than others,) soil, location, etc. We prune a Catawba vine generally to one spur and one cane—the first to two eyes, the latter to from ten to twenty, sometimes even to twenty-five eyes, according to the strength of the vine. Norton's Virginia can, however, be pruned much longer.

Leave no more young shoots to grow than are necessary to produce two good canes, which ought to be grown, if possible, on the spur. All superfluous growth should be checked, as it will materially weaken and injure the grapes. The principal consideration in our climate must be to force the grapes as much as possible, as the mildew will seldom attack them when the berries are larger than small peas. This is accomplished by pinching off the fruit-bearing shoots as soon as the fruit is visible, beyond the last bunch of grapes, and afterward pinching back all suckers to one leaf, until the latter end of July, when all may be left to grow unchecked, to produce young leaves, which will shade the fruit when ripening. The first pinching in ought to be done before the blossoms expand, and then they should not be disturbed until the bloom is over. Tie the young canes away from the fruit-bearing canes, to give freer circulation of air, and pinch off all laterals on them to one leaf, for the same purpose.

Where a vine has failed to grow, it can be replaced by a layer from a neighboring vine, made in the following manner: Dig a trench from the vine to the empty place, from a foot to eighteen inches deep, and bend into it one of the canes of the vine, pruned to the proper length. Let it come one or two eyes above the ground, at the place where the vine is to be, and fill up again with good light soil. The next spring it may be cut about half through, close to the parent vine, and the second spring it can be cut off altogether. Thus inserted, it will strike roots at every joint and grow rapidly; but as it takes much of its nourishment from the parent vine, that must be pruned much shorter the first year. This is a much better way than replanting with young vines.

The summer culture of the ground is precisely as in the first and second years. It is generally observed, as a rule, that during wet seasons, the ground should be kept clean and smooth, stirring but little. During dry seasons, the ground should be drawn up to the vines and well stirred. Should a vineyard show a decrease in vigor, it can be manured by digging a small trench just above the vines, laying in manure, and covering up again with a plow or spade. Vegetable manure, compost, etc., I should consider most suitable; but good decomposed stable-yard manure will also do. Ashes are, no doubt, very beneficial to the vines. Should a vineyard lay on a very steep declivity, it will be liable to wash. This can be partially guarded against, as remarked before, by surface-drains every sixth or eighth row. But if too much ground is taken away, it must be replenished with ground. This can be carted to the vineyard, and then wheeled in between the rows with a wheelbarrow. This is very material, as the vines should always be kept well supplied with ground over the roots.

Pruning is best done late in the fall, or early winter; but it can be followed up all winter, until first of March. Fall pruning is best, however, as it will prevent all flow of sap, and the cuttings are also better, if cut in the fall, and buried, than if wintered on the vines. In pruning, this and all the following seasons, cut away all the old wood, such as bore fruit last season, close to the young canes left unchecked for bearing wood, and treat as the season before, pruning to one cane and one spur. This is called the renewal system of training, and will always keep the vine in about the same bounds and in a thrifty condition, and is the best and most convenient mode for vineyards.

Training of the Vine to Cover Arbors and Houses.—This is altogether different from the treatment in vineyards, as fruit is but a

secondary object in this, the principal object being to cover a large space with dense foliage. However, a vine, if treated judiciously, will also produce a large quantity of fruit, although not of as good a quality as in the vineyard.

Our first step must be, to grow very strong plants, to cover a large space. Prepare a border, by digging a trench two feet deep and four feet wide. Fill this with good soil, decomposed leaves, burnt bones, etc. Into this plant strong plants, cut back as for vineyard planting. Leave one shoot to grow on them during the first summer, which will get very strong. Cut this back, the following spring, to three buds. These will each throw out a strong shoot, which should be tied to the arbor they are designed to cover, and left to grow unchecked. In the spring following, cut each of them back to three eyes, as it must be our object first to get a good basis for our vines. This will give us nine canes the third summer, and the vine being now thoroughly established and strong, we can begin to work in good earnest. It will be perceived that the vine has three different sections or principal branches, each with three canes. Cut one of these back to two eyes, and the other two to canes of corresponding length with the strength of the vine. These are tied up, and all the laterals they throw out left unchecked, and distributed evenly over the trellis. In the spring following, if the vine looks very thrifty, all of these may be cut back to two eyes each, one being calculated to produce fruit, and the other to produce a young cane again. The spring following, the strongest is cut to four or five, and the weakest to one eye, and the spurs at the bottom are kept up by the renewal mode of training, to come in as a reserve, should any of the branches become diseased. In this manner a vine can be made, in course of time, to cover a large space, and get very old. The great vine at Windsor Park was planted more than fifty years ago, and in 1850 it produced 2000 large bunches of magnificent grapes, filled a house 138 feet long and sixteen feet wide, and had a stem two feet nine inches in circumference. This is one of the largest on record. They need, however, strong manuring every year to come to full perfection.

Diseases, Insects, and Frosts.—The mildew is our most formidable grape disease. It generally appears from the fifth to the fifteenth of June, after abundant rains, and damp, warm weather; and I have seen it destroy two-thirds of our Catawba crop within forty-eight hours. I fully concur in the opinion of Mr. T. F. Allen, of Salem, Massachusetts, as expressed in the Patent Office Report for 1854, to which I refer all wishing information on the subject. He thinks it a parasitic fungus, and recommends sulphur as a remedy. We have

had some seasons a very dry, pure atmosphere, and have then not had a trace of it. Close summer pruning will do much to prevent it, throwing as it does all the strength of the vines into the grapes, and allowing freer circulation of air. It was first perceived in 1849, and has since that generally taken one-half to two-thirds of our grapes, (that is, Catawba,) except when we have had an unusually dry season.

The so-called gray rot or grape cholera generally follows the mildew. Indeed, I think the mildew the principal cause of it, as I generally find it on berries whose stems have been injured by the mildew. The principal cause of rot and mildew, all agree, is excess of moisture around the roots, and damp, moist weather. The spotted or brown rot will also take some of the Catawba almost every year; is, however, more destructive on the Isabella and Herbemont. The bitter rot or speck sometimes appears shortly before ripening, but is neither destructive nor common. Premature dropping of the leaves also affects the grapes very much, as they are then exposed to the sun, which often literally scalds them. Early summer pruning has proved a partial remedy, as the young leaves which grow after the first pruning generally remain fresh and healthy long after the first leaves have dropped. Such vines are affected most that have been taxed beyond their strength in bearing. Close spring pruning, allowing no more bearing wood than the vine can support, generally prevents it, at least partially.

The insects most destructive are small gray or green worms, which feed on the young leaves before blossoming. These ought to be destroyed at the first summer pruning. An insect, resembling the curculio, has also been frequently found on the berries, depositing ova and destroying them. A small black beetle will often sting the young shoots, causing them to break off, and grasshoppers will eat the stems of the berries. The skeleton worm, a small greenish worm, also often eats the upper side of the leaves, and thus destroys them. About the time of ripening, wasps will sometimes be annoying, sucking the juice of the berries.

Frosts in winter have sometimes been very destructive, and it is my opinion that the Catawba suffers from them more or less every year. I would therefore recommend laying in, in the following manner: In autumn, prune your vines to a proper length, then bend them down to the ground along the trellis, and fasten them there by throwing a spadeful of earth on them. Afterward run a plow through the rows, and throw a furrow of earth on the vines. In the spring, take them up, by running a dung-fork under them and lifting them up. This is a very simple and expeditious method, and has

been successfully followed near Galena, Illinois, by Mr. James Soulard and others. The cost of the whole operation will not be over five dollars to ten dollars per acre, and will be found much safer than trusting to chance to bring a mild winter. It is here again that the advantages of such hardy kinds as Norton's Virginia and Concord, over the Catawba, will be perceived and appreciated by all who try them.

Late spring frosts will also sometimes destroy the young shoots in low localities. I would recommend not to tie the vines too early, as they are not so easily hurt by frost when kept in motion by draught of air.

METHODS TO PROPAGATE NEW AND RARE KINDS.

I. By Grafting.—The following mode of grafting has been practiced very successfully here: From the middle to the end of March, dig away the ground around the vine you wish to graft, until you come to a smooth place to insert your scion, then cut off the vine with a sharp knife, and insert one or two scions, according to the strength of the vine, as in common cleft grafting, taking care to cut the wedge very long and thin, with shoulders on both sides, cutting your scion to two or three eyes. Great care must be taken to insert the scion properly, as the inner bark or liber of the vine is very thin, and the success of the operation depends upon a perfect juncture of it in the stock and scion. If the vine is strong, no further bandage is necessary, only press a little moist earth on the wound, and fill up carefully with well-pulverized earth. If only one eye of the scion remains above the ground, so much the better. I have had shoots of scions thus inserted, of twenty-five feet in length the first season, bearing a few bunches of grapes, while the next season they produced a full crop. The advantages of this method in testing new kinds, over the common way of planting young vines, will be at once perceived, as there is more than a year gained by it.

II. By Layering.—In the spring, before the buds start, make a bed of fine mould under your vines, then take canes of last year's growth, prune off all dry and imperfect wood, and fasten them to the ground by wooden hooks. Let them remain until the buds have sprouted, say six or eight inches long, then fill fine mould around the shoots, say an inch deep, and after two or three weeks fill up another inch. They will strike roots readily, and make splendid vines for next spring's planting. A good vine, treated in this manner, will make from thirty to fifty plants in a season. The same process is often followed with the young shoots during June and July; but

only the varieties with soft wood can be propagated readily at that time, whereas under the former treatment, even the most obdurate will take root. For the latter purpose, all the suckers should be left on the vine you wish to layer, and the ends of the leading shoots pinched off, to force the laterals into stronger growth. The former method, however, makes the best plants.

III. By Single Eyes.—For this purpose, a hot-bed must be prepared in the following manner: Dig a pit two feet deep to two and a half, then put in a foot to eighteen inches of strong manure; on this put eight inches to a foot of well-pulverized earth, then make a thin layer of short moss, in which insert the buds in a slanting position. They are prepared in the following manner: Take well-ripened wood, and cut it into single eyes, leaving about half an inch of wood on them, above and below the bud. Kinds that have very hard wood will root more readily if cut a week or two before, put into a box covered with sand and left in a moist cellar to sweat. After having pressed your buds into the moss in a slanting position, in rows, three inches apart and half an inch in the rows, cover up evenly with fine sand and place a common hot-bed sash over them. They must be kept moist and given air freely, or they will damp off. An immense number of plants can thus be grown from a few vines, and in a small space; but they need close attention, and will at the best only make weak plants the first year.

VARIETIES OF GRAPES.

I. Varieties tried here.—Catawba.—As yet generally cultivated, and would be an excellent grape were it not so liable to rot. Bunch medium to large; half an inch in diameter, round, dark red or copper color, sometimes almost black here, covered with a fine lilac bloom; flesh pulpy, sweet and good. Makes a good wine, varying from straw color to pink, of a fine fruity aroma, making an excellent champagne, and a good dry hock. It is an abundant bearer in dry seasons, and increases readily from layers and cuttings. Ripens in September.

Isabella.—Does not always succeed here; sometimes good, often indifferent. Bunches long, medium, loose; berries large, oval, black; sweet, but musky and pulpy; subject to rot. Not worthy of cultivation where the following can be had:

Concord.—Proves very successful here; of much better quality than at the East, and entirely free from mildew and rot. Bunch large and heavy, shouldered, somewhat compact; berries longer than

Catawba, round, black, buttery, very sweet and rich. A fine table grape, but has not as yet been tested for wine here. Vine strong and vigorous, very hardy; will keep its leaves fresh and green until frost, and increases readily from layers and cuttings. Ripens two weeks before Catawba, and is a much better market grape. Should be in every collection, and will give more clear profit as a market grape than any other variety yet tried here.

Norton's Virginia—Norton's Seedling.—This grape has proved eminently successful here, and has opened a new era in American grape culture. While the wine of the Catawba is often compared to good hock, in Norton's Virginia we have a wine of an entirely different character, which will compare favorably with good Port wine or Burgundy. Vine vigorous and hardy, productive, starting a week later in the spring than the Catawba, yet ripening its fruit a week sooner, which will make it very valuable in low localities. Bunches medium, compact; berries small, black, sweet, and rich, only moderately juicy; makes an excellent dark-red wine; not subject to mildew and rot. A most reliable grape in all localities.

Herbemont.—Received from Cincinnati under the name of Lenoir. Very successful here, but rather tender; requires covering in hard winters; a very vigorous grower, and but very little subject to mildew or rot. Bunches long, compact, shouldered; berries below medium, black, covered with a blue bloom; skin thin, sweet; flesh without pulp, juicy and high flavored, delicious, fine for the table, and makes excellent wine; very productive. Ripens with the Catawba, but blooms a week to ten days later.

Missouri—Missouri Bird's Eye.—A nice little grape for the table, and makes an excellent wine. Bunches long, loose, shouldered; berries small, black, very sweet; ripens a week before Catawba. Not subject to mildew and rot; vine a moderate grower and bearer; wine resembling good Madeira, in color, flavor, and body.

II. Varieties fruited several times, promising well, but not sufficiently tested.—Poeshel's Mammoth.—A seedling of the Mammoth Catawba, raised by Mr. Michael Poeshel. Bunches large and heavy, sometimes shouldered, very compact. Berries very large, often an inch and a quarter in diameter, round, color like Catawba, pulpy but juicy, with an agreeable, sweet, vinous taste. Fruited twice, makes good wine, and looks truly splendid this season. But little subject to rot, ripens after Catawba, and promises to be a valuable acquisition.

Crystal.—A seedling of the Catawba, originated with Mr. Fricke, near Hermann. Bunches medium, compact, shouldered; berries

somewhat smaller than Catawba, greenish white in the shade, amber colored in the sun; translucent, covered with a white bloom; flesh somewhat pulpy, juicy, sweet, and delicious. A moderate grower, promises to be valuable as a table grape.

III. Varieties not fruited here, but recommended by good authorities, and which ought to be tried in our climate.—DELAWARE.—All good authorities concur in pronouncing this the best grape in America. Free from blight and mildew, never prematurely losing its leaves, and seeming to luxuriate in our climate. Bunches small, very compact, and generally shouldered; berries small, round; skin thin, of a beautiful light-red or flesh color, translucent; without hardness or acidity in its pulp, very sweet, but sprightly, vinous and aromatic. Ripens three weeks before Catawba. (Charles Downing.)

DIANA.—A seedling of the Catawba, which it resembles, but much surpasses in quality; ripens two weeks earlier. Bunch medium; berries medium, reddish lilac, covered with bloom, marked with star-like speeks; very juicy, rich, and aromatic, without offensive muskiness, and keeps a long time.

REBECCA.—Bunches cylindric, about four inches long, very compact, often shouldered; berries full medium, oval; color light green in the shade, golden in the sun, covered with bloom, translucent; flesh of some consistency, juicy, sweet, and delicious, with a perceptible native perfume, but not disagreeable; ripens eight or ten days before Isabella, and is not subject to mildew.

CLARA.—A white grape of the best quality; bunches long; berries medium, round, green, faintly tinged with salmon when exposed to the sun; flesh tender, juicy; flavor rich, sweet, and delicious; quality best.

HARTFORD PROLIFIC.—Hardy, vigorous, and productive; bunch large, compact; berries large, globular, somewhat foxy, black, covered with a bloom; flesh sweet, moderately juicy; ripens about ten days before Isabella.

CLINTON.—Vigorous, hardy, and productive; bunch medium, shouldered, long, and narrow, but compact; berry round, below medium, black, covered with a thin bloom; juicy, pulpy, brisk vinous flavor, eatable eight or ten days before Isabella, but continues austere till after cold weather, when it becomes very good. Will probably prove valuable for wine.

ANNA.—Bunches large and loose; berries large, globular, white, changing to amber, translucent, with a white bloom; sweet, rich, vinous, and high flavored, with a delightful aroma; a good grower, and free from mildew and rot; ripens ten days before Catawba.

Union Village.—The fruit is as large as the Black Hamburg, which it resembles; very hardy and monstrous grower; bunches very large, sweet, and rich; a fine table grape; ripens with the Isabella.

Cassady.—Bunch medium, compact, shouldered; berry round, medium, greenish white, with a faint salmon tint, thickly covered with white bloom; flesh juicy, with but little pulp; flavor pleasant; very good.

Emily.—Nearly white, very rich and of delicious flavor; the bunches and berries resemble in size the Catawba; entirely free from pulp, a first-rate table grape, and two weeks earlier than the Isabella.

Brindle.—A black grape of very rich flavor, bunches resembling Black Hamburg, but not so compact; ripens from two to three weeks earlier than Isabella, and is a first-rate table grape. A free bearer.

Graham.—Bunch of medium size, shouldered, not compact; berry half an inch in diameter, round, purple, thickly covered with bloom, not pulpy, and abounds in saccharine juice of most agreeable flavor; quality best.

Perkins.—A fine grape, almost white, berries resembling Isabella in shape and size, sweet, luscious, and vigorous; ripe three weeks before Isabella; hardy and productive.

Raabe.—A purple grape, very sweet, and is highly esteemed for wine; bears freely, and ripens three weeks before Isabella. Bunches and berries of medium size; quality best.

Devereux.—Bunches of medium size, compact; berries rather small, purple, very juicy, and sweet; good table grape and makes a good wine; not liable to rot. Latter part of July.

Garrigues.—A vigorous grower, hardy and productive; very much resembles Isabella, and no doubt a seedling of it. Bunch large, loose, shouldered; berries large, oval, dark purple, covered with a thick bloom; juicy, sweet, and rich. Ripe ten days before Isabella.

Marion.—Vines healthy, wood firm, short jointed, good bearer. Bunches large, regular, seldom shouldered; berries medium, inclining to oval, dark purplish black, with blue bloom; juice abundant, pulp thin; promising to be one of the most valuable.

To Kalon.—Perfectly hardy, and ripens a little earlier than Isabella; bunches large, shouldered; berries oval, large, very dark in color, very sweet, buttery, and luscious; an abundant bearer.

The above descriptions are mostly copied from Downing, Elliot, and Dr. Grant, and comprise the most desirable of the new kinds.

IV. Varieties which may prove valuable, but are not fully tested at the East.—Canadian Chief, Canby's August, Child's Superb,

Hyde's Eliza, Louisa, Logan, Massachusetts White, Golden Clinton, Northern Muscadine, Garber's Albiness, August Coral, Camac, Louisiana, North Carolina Seedling, Minor's Seedling, Early Isabella, Ozark Seedling, Illinois, Husmann's Prolific, Red River, Arkansas, Texas Post Oak. I have them all under trial, and hope to fruit them next season.

V. Varieties represented by better sorts.—Bland's Madeira, Mammoth Catawba, North Carolina, Halifax, Wine Home, Little Ozark.

It is truly gratifying to the lover of this noble fruit to see the warm interest in its culture and improvement which manifests itself throughout the country. New varieties spring up every day, and we can already count them by the hundred. That among them there are many which, on further trial, will prove worthless, there can be no doubt; but there have also been found among them some whose excellence is already established beyond a doubt. Great changes are also effected in some varieties by change of soil, climate, etc., of which we have an instance in the Concord, which is much better here than at the East, and for which I confidently predict a great future. It is a pleasing and highly interesting task for the amateur to raise new varieties from seed, by hybridizing; by taking the young wood from seedlings that promise well and look healthy, and grafting it on strong vines, fruit can be had of them the third year after sowing, instead of waiting four or five years. Let us, then, all put our shoulder to the wheel, and we will yet find varieties which will combine all qualities we want. We have a wide field with all natural advantages before us, and an immense territory suitable to grape culture. Ours be the glorious task to cover it with smiling vineyards; and we will do more toward promoting the cause of temperance, by giving to the people a healthy and strengthening drink, than all the Maine liquor laws will be able to accomplish. If every man in our State cannot rest under his fig-tree, he can at least rest in the shade of his vines. There is hardly a house so crowded in but there will be room on its side or over its porch for the graceful festoons of the vine, to refresh old and young by its luscious fruit. Let us, then, plant and cherish it as one of the choicest gifts of our Heavenly Father accessible to all his children, be they rich or poor.

MAKING WINE.

The Wine-press.—It is made somewhat like a screw cider-press. An iron screw, three or four inches in diameter is used, either in a strong, upright frame, or coming up through the center of the platform. A strong, tight box-platform, six or seven feet square, is made

of strong plank, two or three inches thick, and six or eight inches at the sides, wedged between heavy timbers. It ought to slope about two inches to the front, which is left open, and a small spout or gutter nailed under it to receive the juice and lead it into a tub. Boards to lay over the mashed grapes, and pieces of oak scantlings to lay across to receive the pressure, complete the arrangement. The power is applied by a strong lever attached to the nut of the screw.

Gathering and Pressing the Grapes.—The grapes should remain on the vines until very ripe. Pick off all decayed, dry, or unripe berries from the bunches in gathering. Such berries as are not fully ripe may be put into a separate vessel, to make an inferior wine. They may then be bruised in a tub with a wooden pestle, or run through a mill made for that purpose. I have used Hicock's cider-mill to advantage, by taking off the upper zinc cylinder. They are then emptied into a large receiving or fermenting tub, with a spile on one side to draw off the must. This is covered with a cloth, and the mashed grapes left to undergo a slight fermentation. I generally let them ferment twenty-four hours, and then draw off the must, and press. Some press them immediately; others leave them to ferment three or four days. When pressed immediately, they will make a light-colored, mild, agreeable wine, which will soon be salable. If fermented longer, they will make a wine of a darker color, more aroma and more stringency, but which will keep better and improve with age. In the whole process of wine making the utmost cleanliness should be observed.

After fermenting, the grapes are emptied into the press and pressed several times, until all the juice is extracted. The must is then filled into clean, sweet casks, in a cool cellar. Should the casks be new, soak them for eight or ten days in clear water. They are then scalded with hot water, and when dry fumigated with sulphur. Fill the cask to within three inches of the bung-hole, and lay a vine-leaf, with a small sac filled with sand, on the bung-hole. They should then remain until fermentation is over, when they can be filled with must, kept separate for that purpose, and bunged tight.

In February or March the wine will be clear. It should then be racked into clean casks and bunged tight. A slight fermentation will ensue in May, after which it should be racked again, and may then be kept in casks or bottles, as most convenient.

Another Method to make a Superior Wine.—Leave the grapes on the vines until very ripe, then gather carefully and spread the grapes in a dry loft, where there is plenty of air, on layers of clean straw. Let them remain for about two weeks, then draw them through a rasp, made for that purpose, to separate the berries from the stem; or they

may be stripped off by hand, mashed, and then pressed. This will make a very strong, yet mild wine, which will not have the stringency so many object to in our native wines, as this is mostly in the stems of the grapes; but it is very troublesome, and will never be extensively practiced.

Keeping the Grapes for Winter Use.—In a dry day gather the grapes, choosing the best bunches, and carefully cut out, with a pair of scissors, all decayed or rotten berries, taking care not to bruise them, and lay them in a shallow basket. Seal the stems with sealing-wax, to keep them from shriveling, and lay them in a dry, airy garret, on clean, sweet straw, spread for that purpose. They must be spread thin, so they do not touch each other. In this way they will keep for several months. If you wish to keep them still longer, pack them, after a few days, into shallow boxes, between layers of cotton batting, and place them in a cool room. They may be kept thus for three or four months.

Statistics.—The cost of establishing a vineyard naturally depends much upon the quality of the soil, cost of labor, variety of vines, etc. The following is about the cost of a Catawba vineyard per acre, in common soil, without stones; distance six by six or four by eight feet, with spaces allowed for surface drains, paths, etc.:—

Cost of	1100 yearling plants	$25 00
" "	trenching	75 00
" "	planting	25 00
" "	1100 small stakes	5 00
" "	attention during first summer	25 00
" "	1150 cedar posts, at 8 cents	92 00
" "	3300 laths, nails, etc	20 00
" "	labor, second year	50 00
" "	labor, third year	83 00
	Total	$400 00

Of course, several of these items can be furnished considerably cheaper where timber is convenient.

The following has been the produce of a vineyard of Catawba now under my care, since 1849:—

Bearing season.	Vines in bearing.	Galls. wine made.	Price.	Yield per acre.
1849, first	1500	750	$1 25	$6 00
1850, second	2000	150	1 25	0 95
1851, third	2000	500	1 25	3 00
1852, fourth	1800	210	1 25	1 20
1853, fifth	1500	580	1 25	5 00
1854, sixth	2500	750	1 75	6 00
1855, seventh	3000	230	2 00	1 50

Bearing season.	Vines in bearing.	Galls. wine made.	Price.	Yield per acre.
1856, eighth	4000	150	$2 00	$0 75
1857, ninth	4000	2000	1 20	6 00
1858, tenth	4000	210	1 20	0 60
1859, eleventh	1200 probably.	1200 probably.	1 20	4 55
Which will show the average yield to have been about				3 23
Deduct from this cost of yearly labor			50	
Interest on $400 at 10 per cent			40	
			$0 90	$3 23
Will leave a clear profit of				$2 33

Yield of Mr. M. Poeshel's vineyard, (Catawba):—

Year after planting.	Acres in vines.	Yield of vineyard. Gallons.	Price of wine sold.
1847, second	5–6	24	$2 00
1848, third	5–6	1000	2 00
1849, fourth	2	600	1 50
1850, fifth	2	350	1 25
1851, sixth	2½	450	1 75
1852, seventh	2½	500	1 50
1853, eighth	2½	350	2 00
1854, ninth	3½	800	2 00
1855, tenth	3½	50	1 50
1856, eleventh	3½	1000	2 25
1857, twelfth	6	4500	1 50
1858, thirteenth	6	1100	1 75

It must be taken into consideration, however, that at the time these vineyards were planted it was an entirely new branch of industry with us, and of course numerous errors and mistakes in the treatment of the vines were made. We had also the extremely cold winter of 1855–6, which destroyed almost the whole crop, killing the young wood.

COST OF AN ACRE OF NORTON'S VIRGINIA.

1000 layers, at $25 per 100	$250 00
Trenching	75 00
Planting	25 00
1000 small stakes, 18 inches	4 00
1050 cedar posts, 8 cents	84 00
3000 laths, nails, etc	18 00
Labor, second year	50 00
Total	$506 00

The third year the vineyard would probably bear enough to pay cost of attending, expenses, etc.

Average yield per acre the fourth year, and all following:—

400 gallons per year, at $1 50 per gallon		$600 00
Deduct from the cost of yearly labor	$50 00	
Interest from capital	50 60	
	$100 60	600 00
This will leave a clear profit of		$499 40

Yield of an acre of Concord vines for market purposes:—

1000 vines, at least 10 lbs. per vine (probably 15 lbs.)	lbs. 10,000
Lowest market price, at 10 cents per lb	$1000 00

But as the Concord is two weeks earlier than the Catawba, much of the crop can be sold at much higher prices, as it has also a much finer bunch and berry.

The whole number of acres planted in and around Hermann may be estimated at about two hundred and fifty acres. But people are planting more every year, and I boldly assert that in a few years the acres devoted to wine culture in our State will be counted by thousands instead of hundreds. And here let me add, that it has been a great drawback to the advancement of grape culture here, that our people are too much disposed to look to Ohio, and the doings of Ohio wine-growers, for examples. We have a different climate here, a different soil, and therefore our treatment must be different, and other varieties may be cultivated here. Let us eke out our own path, like energetic, thinking men. Let us try other varieties—not only those recommended by our Ohio brethren; let us faithfully try all, and keep only such as are worthy of general culture. The fiat of Mr. Longworth against Norton's Virginia has done more to retard the progress in the culture of that invaluable grape than all other obstacles it met with; and why? Because we preferred seeing with other eyes to using our own; and they were not fairly opened until Ohio wine-growers sent here to procure plants of the very grape Mr. Longworth had condemned.

But the most serious obstacles are overcome. We have labored faithfully and hard. We have learned something, and are learning more every day. A glorious future is before us; let as labor with head, heart, and hand, and we may be sure of a rich reward. Let us be willing to listen to the advice of others; but let us also always hold this principle in view, that experience is the mother of wisdom.

VINE CULTURE.—BY WILLIAM HAAS.

The preparation of land for a vineyard by vine-dressers is expensive, may cost about one hundred dollars per acre. The land of our vineyard, containing eighteen acres, belonging to the Boonville Wine Company, is turned over with plow and shovel to the depth of thirty inches, the top soil brought down and the subsoil up. Others prepare the land with deep plowing only, producing equally as good crops of grapes, it is said, as more costly prepared vineyards.

The distance of the vines in the vineyards near Boonville is from four to six feet in the rows, and the rows sufficiently apart to cultivate with horse and plow between them, say five to six feet.

Vineyards located on the side of hills ought to be protected by terracing the land against the washing of rain.

Beginners in vine-dressing I would advise to consult "The Culture of the Grape, and Wine Making. By Robert Buchanan." This is a valuable treatise on the subject, giving the views of intelligent vine-dressers on all matters belonging thereto.

Our State, Missouri, is very favorable for the culture of the grape-vine. But we must acknowledge that in past seasons, between good crops we had some severe disappointments, depending perhaps not so much on climate and soil as on the kind of grape here in culture—the Catawba.

The Catawba is a very good wine grape, from which excellent wine is manufactured, equal in quality and flavor, and comparing favorably with the celebrated Rhine wine. The Catawba vine is a great bearer, but the grapes are apt to rot every year; in wet seasons more, in dry seasons less.

The vine-growers at Hermann have begun several years ago to cultivate the Virginia Seedling grape, said to be free from all rot, and is a good bearer. The wine mash from it is of a very dark color, and of good quality, preferred by some persons to the Catawba wine. We will not be found behind our Hermann friends in experimenting, and I have ordered from Messrs. Husmann & Co. fifty dollars' worth of Virginia Seedling roots.

Having been, in the fall of 1858, in Chicago, I noticed there with delight and surprise the crops of a small number of the Clinton grape-vine, planted on sandy and level ground, and trained to trellises. From the produce of perhaps not one-twentieth part of an acre three hundred and seventy-five bottles of very good wine was made. From another single grape-vine twenty gallons were made. The same vines

have been the next season, this last summer, in a like promising condition; but a severe frost in June destroyed the blossoms.

The Clinton is a pure native grape-vine, very hardy, and the grapes not subject to mildew or rot. This variety of the grape-vine may be of immense value to the vine-growers of Missouri. It grows, flourishes, and produces so well on the sand flats of Lake Michigan, why may it not do so here on our Missouri river-bottom sand land? Take the highest and driest localities for its cultivation, and we need not have any fear of success. Do not consider the occasional overflowing of the river too seriously; a crop may thereby in perhaps twenty or thirty years once be destroyed, but the vines will not be damaged by it, and will come out next season renovated, and stronger to bear than before. I have engaged several thousand of the Clinton, intending to plant them according to the suggestions here made.

THE LEAD REGION OF SOUTHWEST MISSOURI—GRANBY.

History.—The riches and extent of the lead mines of Southwest Missouri (principally situated in Newton and Jasper Counties) render this, as a mining region, justly entitled to the reputation given it by Professor Swallow, State Geologist, that of being "one of the best lead regions in the world."

These mines, as is generally the case, were originally discovered by the aborigines. The Osage Indians at sundry times brought a number of bars of lead to the trading house, at the village of Neosho, which had the appearance of having been recently molded, which led to the inquiry by the whites as to the discovery of the lead. The Indians, for a proper consideration, disclosed to the whites the location of the deposits, and the land was immediately entered by Mr. Sheppard, as the agent of W. S. Moseley, of New Madrid, who with his uncle, George W. Moseley, Esq., had a trading house at Neosho. Though inexperienced in the business, they commenced mining on a limited scale and under many disadvantages in 1849, and smelted at first in what is known as the Drummond Furnace, upon which an improvement had been recently made by Hon. J. P. B. Gratiott, of Washington County, Missouri, which improvement consisted of placing the fire-house at the end, instead of at the side of the furnace. Upon this Drummond furnace about six thousand pigs of lead were smelted, up

to 1852, when a Scotch hearth furnace was erected by S. Dunklin, Esq., of Washington County, in connection with the Messrs. Moseley. About sixteen thousand pigs of lead were made at this furnace by the different parties who smelted there; the ore being obtained principally from the Moseley mine, some from Centre Creek, and small quantities from Granby and Spurgeon Prairie. John Fitzgerald & Co. had a blast furnace on Turkey Creek, and the Messrs. Harkelrode one on Centre Creek, in operation about the same time. The last named were in Jasper County, and manufactured considerable quantities of lead. Moseley's furnace is ten miles southwest from Granby.

The extensive diggings south from Granby were discovered in 1854 by William Foster, while digging a well for Madame Richardson; previous to this, however, Professor Swallow had discovered lead in the same vicinity.

Owing to the want of capital to mine and smelt, and the very poor facilities for transportation, but little systematic mining or smelting was done until 1856, when Messrs. J. B. Dale & Co. and Booth, Ryan & Co. engaged men extensively in smelting, and offered better inducements to miners. The ore then ranged from $17 50 to $20 per one thousand pounds, and lead from six and a quarter to six and a half cents per pound. No rents were required from miners, and they had the full benefit of all the mineral furnished by them. This condition of things existed until June or July, 1857, when the mines covered by section six came into the possession of Messrs. Blow & Kennett, as the lessees of the Pacific Railroad Company, (as hereinafter specified,) since which time these mines have yielded both in quantity and quality an amount of mineral second to none in the country, in proportion to the number of mines opened or miners employed; the business having increased from twenty-two pigs of lead per day to about three hundred, which has for some time past been the daily average product.

The complete success of the mines at Granby is attributable to the very liberal course pursued by, and the discreet and judicious management of the present proprietors, Messrs. Blow & Kennett, who, by the investment of a large amount of capital in the introduction of the most approved machinery for mining and smelting, have concentrated almost the entire operations of the Southwest to their great center, on section six, infused new life and energy into all the adjacent country, and increased the population of the town of Granby from a cluster of log cabins to a town of several thousand population, and developed one of the most important mineral regions of this great mineral State.

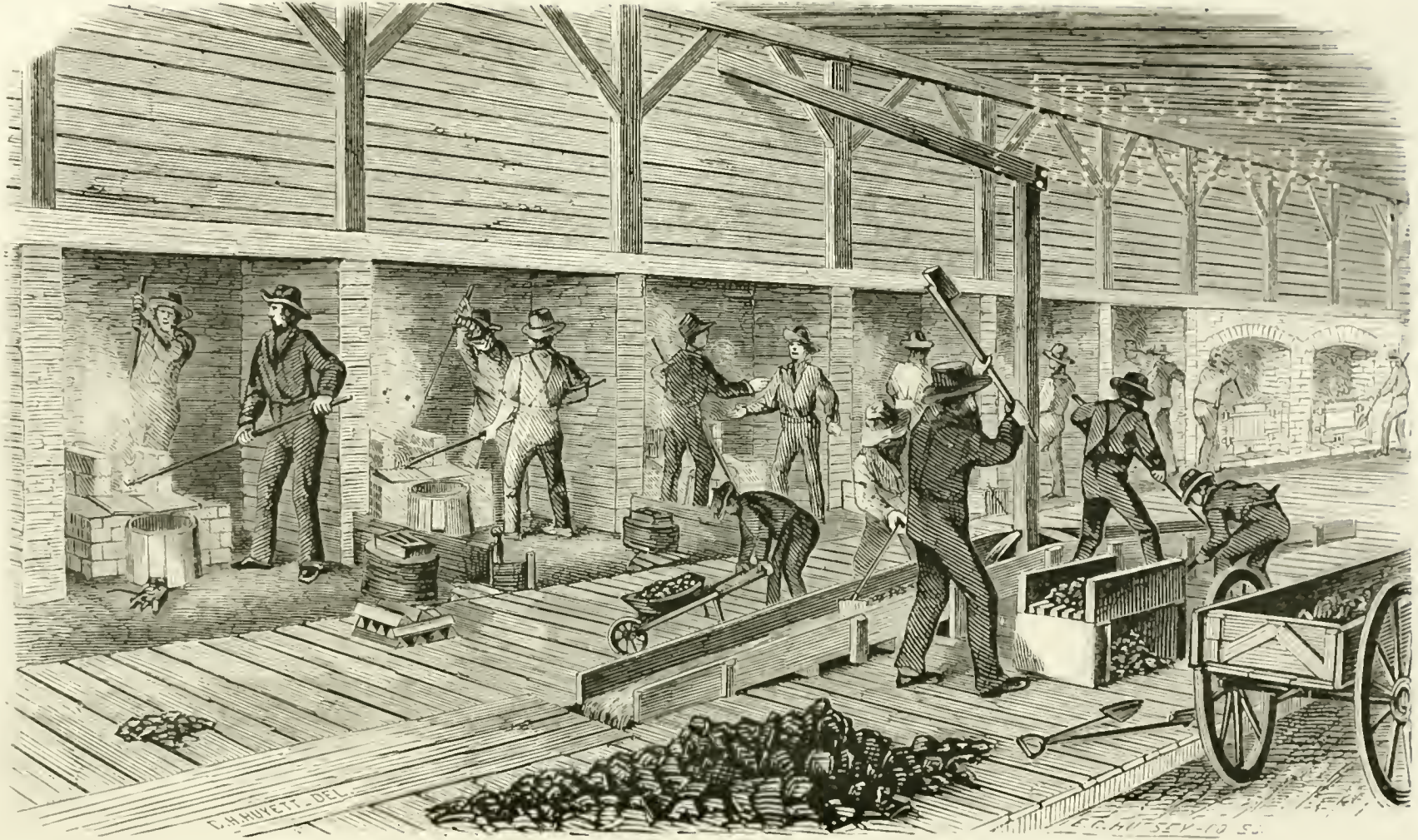
By an act of Congress, the Pacific Railroad Company received in 1852 a grant of land, embracing every alternate section for twelve

miles wide, along the Southwest Branch, amounting to nearly 1,040,000 acres. The company were entitled to dispose of any of these lands lying within twenty miles of the completed road. After the transfer was made and the prospective title vested in the railroad company, agents were at once sent out to protect the lands. Granby proved to be located upon one section of this land. The squatters at this and upon other portions of the best mineral lands, in view of the immense mineral wealth that only required their labor and industry to secure a sure and remunerative return, declared that the railroad company had no legal right to the land, and resisted every effort made on the part of the agents to control it. The agents demanded a rent; the squatters refused to pay it, and after considerable trouble, the railroad company abandoned the lead region until 1857, when a lease was made to Messrs. Blow & Kennett for ten years, for a rent or tax of two dollars per thousand pounds for all mineral taken from the mines.

At this time there were about 1000 miners at work, all of whom held claims jointly or severally, and worked them as they now do—selling their mineral to the smelters, who had erected furnaces in the vicinity for the purpose of reducing the ore to metal. Trading and selling claims was here practiced, as is the case in all mining districts; some claims being sold at prices ranging from $50 to $1000 per acre, according to the prospect. It is estimated that at that time, (January, 1857,) 5,000,000 pounds of ore had been taken out by the squatters, smelted, and found its way to St. Louis and other markets, yielding some 3,000,000 pounds of manufactured lead. Owing to the scarcity of money, and from a want of proper system and encouragement, the mines had not been worked as vigorously as they were subsequently. Those engaged in mining at Granby at that time were not all of that hard-working, industrious class whose hands supply their families with the comforts of life, but principally held their claims for speculation, and depended upon their sales of claims rather than upon their actual mining operations. As soon as it was known that Messrs. Blow & Kennett had received a lease of the mines, rumors of every conceivable character prejudicial to the lessees were spread abroad by these speculators, informing the squatters that they would be driven from their claims and lose the rights which they regarded as belonging to them, and deprived of all profits arising from the working of their lots or claims. In the midst of these inflammatory rumors, Blow & Kennett appeared, with the evidence of their title, and called a meeting of the miners, before whom was sub-

mitted their evidences of several right, with the course they had decided upon for the future regulation and government of the mines.

The proposition of Messrs. Blow & Kennett was, that the miners should continue upon their claims, and work them as heretofore, receiving a fair price for their ore, which was to be governed by the market value of the metal, less two dollars per thousand pounds, which went to the Pacific Railroad Company, that being the amount specified in the lease between the parties. For the greater security of the miners, a basis of 400 pounds of lead was offered for every 1000 pounds of ore, when the quotation price in cash did not suit them. Up to the present time, (May, 1860,) lead has never been called for, the cash price being satisfactory to them. These matters were understood as arranged, and Blow & Kennett returned to St. Louis for machinery and proceeded at once to erect their furnace, which was put in successful operation on the 18th of January, 1858, at a cost of $20,000. The furnace once in blast and the rules enforced produced dissatisfaction in the minds of some of the miners, outsiders, and speculators. Factions of disaffected miners were consequently formed, and were led on by disappointed smelters, caucassing and calling meetings both private and public in reference to the rights of Blow & Kennett, the legality of which they questioned. Speeches of the most inflammatory character were made at those meetings of the miners, and the life of Peter E. Blow, the master-spirit of the mines, was frequently jeopardized by some of the most reckless and daring miners. Suits at law were found necessary to protect the rights of the lessees, and, after a severely contested action by the claimants and defendants, during fifteen months, it was finally decided by the Supreme Court of Missouri, in March, 1859, that the title was, according to the lease from the railroad company, vested in Blow & Kennett, and that they were the sole owners of the mines during the time specified in the lease. This decision settled the legal difficulties, and the conciliatory and generous course pursued by Blow & Kennett soon brought about a mutual good feeling between the proprietors and miners; and now the mines are in a prosperous condition, the miners receiving good prices for their ore, and the smoking furnaces, under the immediate control of Peter E. Blow, Esq., are turning out millions of pounds of this valuable metal, which finds its way to the markets, from New Orleans to Boston, and lead bearing the brand of "Blow & Kennett" is receiving a world-wide reputation.



INTERIOR VIEW OF BLOW & KENNETT'S LEAD FURNACES, GRANBY, MO.

The Furnace and its Operations.—The furnace (of the interior of which we present an accurate illustration) is in size 136 feet front by fifty deep, with additional buildings for engine, sawing wood for the furnaces, water-pumps, etc. Six "eyes" or Scotch hearths are in blast, at each of which two men are employed, called front and back hands. The former receives two dollars for reducing 3000 pounds of galena to metal, the latter one dollar and fifty cents; which labor is performed in about five hours. They generally run only the 3000 pounds; but frequently they exceed that amount from 2000 to 3000 pounds, receiving the same compensation *pro rata*. The mineral yields, upon an average, sixty-five per cent. In addition to the above six eyes, the furnace has two "slag hearths," which, together, represent eight furnaces in the engraving. The Scotch hearth is familiar to every one who has ever visited the mining region, hence a description thereof is deemed unnecessary.

From personal observations we learned many facts relative to the manufacture of lead here. The furnace of Kennett & Blow makes twenty-five pigs of lead (weighing eighty-one pounds each) to the hearth, and frequently they exceed that amount. Three of the hearths about the middle of October, 1859, made fifty-six pigs each in seven hours, with the usual two hands to the hearth; amounting to the sum of 12,608 pounds. The men who made this extraordinary run were Buis, Hancock, and Perringer, each making fifty-six pigs of lead, weighing eighty-one pounds to the pig; in all 168 pigs, from 17,400 pounds of mineral.

Taking the Mineral from the Earth.—Galena or lead ore, at Granby, is found at a depth of from forty to sixty feet, according to the undulations of the surface. There are three strata, varying from eight to ten feet apart, which brings the lower lead or stratum about sixty feet below the surface. The "cap rock" is of a flinty formation, usually about eighteen inches thick, and is generally found above each stratum. Miniature railroads are in operation through the principal openings, by means of which the ore is conveyed to the main shafts, where it is raised by windlasses worked by hand or horse-power.

After the mineral is raised to the surface it is picked over by hand, and all foreign matter separated therefrom by the use of picks. This operation is known by miners as "pick-a-weeing the mineral." It is then taken to the furnace, washed, and smelted. Four hands are employed in breaking and washing, turning off about 20,000 pounds of mineral per day, which is then weighed out in quantities to suit the convenience of the smelter—no fire or smelter, however, taking less than 3000 pounds. The ore thus ready for the smelter, he pro-

ceeds to render it to metal, and usually finishes his day's work before noon, unless by overwork extra pigs are made.

The yield of galena here is sixty-five per cent., depending, however, upon the quality of the ore, and its freedom from foreign matter. Scientific analysis has proven that there is eighty-two per cent. in the pure galena, but it is next to impossible to produce this quantity by the Scotch hearth.

The following is a statement of the amount of mineral taken from the principal mines, during the dates given, and received at Blow & Kennett's Furnace:—

Hopkins & Hersey, from April, 1858, to Nov. 1, 1859				910,000	lbs.
Culpepper & Hersey, from	"	"	"	2,200,000	"
Frazer & Hersey, from February,	"	"	"	836,000	"
Braun, Denning & Co., from Jan. 1859, to	"	"	"	623,000	"
Isaac Evans & Co., from April,	"	"	"	448,000	"
Trent & Sons, from May,	"	"	"	177,000	"
				5,194,000	"

Hopkins, Hersey & Co., to whom we are indebted for valuable information, etc., have an extensive and profitable mine, which, during the eighteen months previous to the 1st November, 1859, produced 1,200,000 pounds of mineral. Joseph Hopkins, Esq., the senior partner, came from the lead region of Washington County, where several years' experience as a practical miner well qualified him for the extensive operations he has so successfully conducted at Granby. There are other mines equally rich; and Culpepper & Hersey have taken out more galena than any other on the diggings. Frazer's mine has produced over 1,250,000 pounds of mineral. It was opened in the winter of 1859, but is now abandoned, having been exhausted. In the spring of 1858 the largest piece of mineral ever taken out at Granby, was raised here. It weighed 1700 pounds, and is now at the office of Blow & Kennett, St. Louis. There are between forty and fifty mines now being worked, which employ an average of 500 miners.

The total amount of mineral received at the furnace, during the year 1858, was 2,806,881 pounds; and from January 1 to November 1, 1859, 4,753,652 pounds.

The total amount of lead manufactured in 1858 was 26,225 pigs, of eighty-one pounds each. Lead made in 1859, up to November 1st, 35,741 pigs.

THE GRANITE AND KAOLINS OF SOUTHEAST MISSOURI.

[The following article on this important subject was written expressly for this work by F. Woolford, Esq., Paton P.O., Bollinger County.]

Kaolin that is sufficiently pure, and free from all foreign matter, and well adapted to the manufacture of true porcelain or hard china-ware, is but very seldom found anywhere in this country; hence any State possessing it may look upon it as a rare and valuable mineral.

Kaolin, however, of the best quality is found in township 33, range 8 east, upon section 36, six miles southwest from Paton P.O., and eight miles from the village of Bristol. This kaolin, upon thorough and practical investigation, has proved to be a very extensive deposit, and of a *number one quality*. It is found among the primitive rock, fourteen feet below the surface; it is six feet thick or more, of a good quality, very white and friable, meager to touch, well decomposed; it occurs below the gneiss; this, as well as the diorite below it, is intercepted and intersected by veins of feldspar, occurring sometimes in massive deposits and at other times in veins; the decomposing action of the weather has gradually converted the gneiss into a red, and the diorite into a blackish-gray mass, very much resembling kaolin, but which could not be used on account of the color. The feldspar is, however, thoroughly decomposed, and contains but little quartz, consisting chiefly of kaolin, somewhat plastic; and is well adapted to the manufacture of true porcelain and the finest and most substantial articles of iron stone-ware, with a proper proportion of quartz, sand, and feldspar; also, by varying the mixture, the finest quality of ironstone china and other earthenwares can be produced.

The next clay of importance is called "sandy stiff" or ball clay, by which latter name it is known by practical potters. This is nearly allied to the china clay, and possesses many of the same properties. It is unaltered in the porcelain kiln, becomes very white, and will admit from twenty-five to thirty per cent. of flint or silex. This clay is very plastic, and is the best of the kind I have discovered in Missouri. Its locality is in township 34, range 8 east, in the southwest corner of Perry County, and about twelve miles from Bristol. I believe it will be found in quantities sufficient for all practical purposes.

The next clay of importance is the "*pipe clay*," found in section 13, township 33, range 9 east. This contains from two to two and a half

per cent. of iron, and a small proportion of lime, but is more plastic than any of the clays, is a very good white, and admits fifty per cent. of flint or silex, (a very desirable quantity,) and can be advantageously combined with the other clays for the manufacture of all kinds of common earthenwares.

A fine, white *quartz sand*, of good quality, and closely resembling the St. Genevieve sand, is found upon the last-named locality. This sand is well adapted to the manufacture of glass, and for glazing for pottery.

A very extensive bed of *fire clay* (twenty-five feet thick) is found at this same locality, well adapted to the manufacture of the best quality of fire brick, pottery, glass pots, etc. From this clay I am making from fifteen to twenty thousand gallons of hard-glazed stoneware per year, and various other articles. This deposit seems to be inexhaustible. The mountain is based upon it for more than a mile, and is capped with white sandstone.

Near this same locality is another bed of kaolin, which is not sufficiently pure for manufacturing hard ironstone china, but would make very good common queensware.

I have also discovered, in township 33, range 9 east, (one and a half miles from Paton,) another bed of very fine kaolin, well adapted to the manufacture of true porcelain and ironstone china; and combined with the pipe or ball clays, would produce every variety of earthenware.

In the same vicinity is found a stratified chert of suitable quality for the erection of mills for grinding silex for pottery or glazes.

In the fire clay above spoken of are found considerable quantities of *cobalt* of the purest quality, also *tin* and *nickel*. These minerals are found mixed with the fire clay upon the side of a hill two hundred and fifty feet in height, having been separated from the rock above, and in its descent mixed with the clay.

This rock has the appearance of sienite, accompanied by feldspathic sand, and some portions of it resemble red granite.

All the clays and other minerals above spoken of are found in close proximity to each other, and are easy of access. My opinion is, that if practical potters and capitalists could be convinced that all the wares named can be readily produced here, with wood as fuel, this would very soon become the *great Staffordshire of America*, and hundreds of thousands of dollars that are now sent to foreign countries annually for china, glass, and queensware, could be invested in the manufacture of better ware at lower prices in Missouri.

We have here an abundance of wood for fuel, and beautiful, rapid streams, affording ample water power. The soil is well adapted to the

GRAND RIVER VALLEY.

growth of grains, grasses, and fruits, the climate pleasant and healthy, and the scenery very romantic and beautiful. I know of no better investment of capital, either for the advantage and profit of those engaging in the manufacture of porcelain, china, and earthenware, or for the good of the State at large, than the establishment here of extensive potteries. My prediction is, that the day is not far distant when these rare minerals will be better known and more fully appreciated, and I know of no more successful way to introduce them, than by a full description of them in your valuable State work.

THE GRAND RIVER COUNTRY.

The fertile valley drained by the Grand River comprises some of the richest counties in the State, and an area in extent (partly in Iowa and partly in Missouri) of nearly 12,000 square miles—larger than the kingdom of Belgium; as large as Holland; and enough territory to make the States of Vermont, New Hampshire, and Connecticut. Its area in Missouri is about 7000 square miles or more, the balance, about 5000, lying in Southern Iowa. All the waters of this vast territory—an inchoate empire—find their outlet into the Missouri River at Brunswick, in Chariton County.

The general features of the country are about the same throughout the thirteen counties drained by its waters, to wit: Chariton, Carroll, Linn, Sullivan, Livingston, Caldwell; in part, Daviess, De Kalb, Gentry, Harrison, Mercer, Putnam, and part of Nodaway. Of that portion of the valley lying in Iowa it is not in our province here to speak, except, by the way, that the lands are not inferior to those in Missouri, and that judicious enterprise, aided by perhaps a too speculative spirit, had enhanced their market value, previous to the panic of 1857, to even a higher rate than was attained in Missouri. But it is worth while here to say, that Missouri lands in this part of the State have sustained themselves in price, while Iowa lands of corresponding fertility and location have receded, in some cases, ruinously.

It is strange that, with the well-known fertility of this country, and its acknowledged adaptability to the production of all the great staples of both the North and the South, its resources in coal and water-power, it should be so long neglected by the emigrant seeking a Western home. We have seen cotton growing in Sullivan County

alongside of tobacco; and in the same latitude hemp can be cultivated with an abundant yield. The cotton in question was planted by a Georgian or North Carolinian, who would not give up old habits, and must pitch a small cotton crop at a venture.

But the Kentucky and Virginia emigrant, the Tennessean and the Carolinian passed over these beautiful lands, (now become blooming fields, then prairies covered with rank, tall grass high enough to hide a man and horse,) to find the more densely-timbered country on the Platte, even before the Platte country was properly a part of Missouri. They preferred lands that they must open for culture by the old familiar process of clearing and grubbing, to those already cleared and grubbed to their hands by a bountiful Providence. Then, however, the Grand River country was under the ban of unhealthiness. That great scourge of the Western squatter was supposed to be snuffed in every breeze that bowed the tall grass in summer, or swept the sheet of flame in its terrific splendor across the almost unbounded meadow of Nature's sowing. Even the gentle dews of heaven were laden with ague. All countries of great fertility of soil, where the vegetable products are unconsumed by stock and allowed to rot where they grow, are liable to miasmatic diseases. The very fertility of the valley even retarded its settlement. Few were willing to endure that ordeal which no one but the pioneer squatter can fully appreciate. The chills and fever—which, by-the-way, overcame Julius Cæsar when he was conquering Gaul—were as certain to come as his sod-corn; and Sappington's pills, Peruvian bark, and quinine were as much daily necessities as his bread and meat, or whisky bitters. Well do those early settlers, who are now living in comfortable country mansions, with their broad acres lying around them, and their lowing herds and sleek mules browsing on blue-grass and clover, remember their numberless combats against this insidious disease. Well can they recount the diagnoses of blue nails, pains in the limbs, lassitude without labor—degenerating with many into confirmed laziness—the cold sensations, the shakes, and, finally, the fever, which left them in a state of debility such as it is hard to conceive without an experience—a feeling of most depressing weakness—in which a man would feel a complete unfitness for all sublunary offices; like a wasp with a body of two hemispheres linked together by a narrow isthmus, his attenuated back bone.

But pardon this digression! The country was at first unhealthy, more so than the Platte country, because of its more rank prairie vegetation. But there were other causes which produced an unhealthi-

ness. There were many swamps and lakes scattered through the valley, which produced malaria. It is well, here, to say something in reference to those lakes. The drainage of so large an extent of country rendered the low lands on the river and tributaries liable to overflow—and indeed the broad bottom lands which lined one side of every stream were often submerged. The breadth and extent of these bottoms, as they are now rearing themselves out of the reach of overflows and being brought into cultivation, to some are even yet surprising; but the time has been when they were hardly more than adequate to their office of draining the vast territory watered by Grand River.

The waters subsiding from the low lands, after an overflow, left usually a broad sheet of water on whatever depression there might have been in the bottom. To these shallow lakes the buffalo would repair in the summer, in vast herds, until they wore them broader and deeper, so that they became permanent. But as civilization advanced, that untiring adventurer, called, I believe, in France, the Christopher Columbus of the *truffle*, the swine, was the necessary accompaniment of civilized man, as settlements approached this yet wild territory. The introduction of swine into this valley was of importance. They in their turn hunting their daily food, found to them a delicious esculent in the yonkapin, called *nuckshaw* by the Indians, and in seasons of drought, such as have been known in this valley from 1854 to 1857, done much to undo the work of the wild buffalo. Indeed, the hogs have been the silent engineers who have reclaimed many of our bottom lands during the last thirty years, and have achieved what thousands, even millions of dollars, by human hands could not have accomplished in this valley. Even before there was a permanent white settler in the valley of Grand River, they were driven into the bottoms from the settlements in Howard County to fatten on the *mast*, and then in the dry seasons commenced rooting in the ponds after the yonkapin, by which they broke the crust of the lake and suffered the accumulated waters to drain through the porous alluvium or quicksands.

The Grand River country previous to about 1817 was inhabited by Indians. The Iowas occupied the territory of what are now Grundy, Mercer, and Harrison Counties; their lands and hunting-grounds extended even down into the Counties of Livingston and Caldwell. Traces of these aboriginal inhabitants are yet abundantly visible. In Grundy County there is to be found the remains of an Iowa village of considerable dimensions. In the northern part of Livingston, the old inhabitants yet remember their wigwams and

huts as they stood in 1833. Familiar stories are yet told in those counties of adventures and incidents in which they were parties.

In North Grand River, James Weldon was an early settler; from him the Weldon, a branch of Grand River, which has its junction with the Thompson, about three miles above Trenton in Grundy County, takes its name. He was familiarly known to the Indians as Jim, and his house was a sort of an exchange where a considerable trade was carried on between the Indians and whites. Dr. Thompson, a Virginia gentleman, was among the first settlers on the western fork of North Grand River, from which the stream takes its name. He was familiarly known among the Iowas and Delawares as Doc., so that Jim and Doc. were among the Indians regarded as the big chiefs of the white settlers. In Sullivan County, John Baldridge was among the early settlers, and others we have not space here to mention. Honorable Jno. C. Griffin, who is now Circuit Attorney for the 11th Judicial District, reached Mercer County in 1835, of which county and Grundy, his present residence, he was the first representative in the State Legislature.

Farther down the river settlements were made much earlier. John Graves, Esq., still living, a family of Kirks, and others, were in Livingston at an early day. Elisha Henry Ford was in that county, but perhaps not as a resident, as early as 1825. His singular adventure of catching a panther asleep, and springing a young sapling over his back till he could tie his four legs together over it and bear him home, is rather too romantic to be seriously related here, but is worth mentioning as a traditionary incident.

The tribe of Indians from which our State and our magnificent river took its name, the Missouri, were inhabitants of the lower part of the valley, and dwelt in the valley of Grand and Chariton Rivers. It was in what is now Chariton County that their last battle was fought with the whites, probably as early as 1810. The vestiges of this battle-field are yet, it is said, visible. They were there exterminated.

The Counties of Carroll, Caldwell, De Kalb, and Daviess were settled principally with what emigration fell back from the Platte country. From the time of the acquisition of the territory from France, civilization seems to have radiated from two or three common centers, *i.e.* in North Missouri settlers radiated at first from St. Charles; next, Loutre Island furnished the nucleus; and finally Cooper's Fort and Boonslick were the radius from which adventurous civilization shone upon the eastern part of the Grand River valley; while from the Platte settlements it radiated on the western branch

of this valley. The Counties of Harrison, Gentry, and Nodaway are more recently settled than any on Grand River, and were all settled since 1840. Putnam perhaps should be excepted, which has been erected in its present form, at least into a county, since 1850.

In 1838 the Mormons made their stronghold at Far West, in Daviess County, after having been dislodged from De Witt, in Carroll County. The celebrated Mormon war of that year and its incidents are yet remembered by the early settlers, and among the earliest of whom is Mr. Perriston, Sen., who resides yet on the farm he settled, on the west fork of Grand River, as early as 1831.

Enough of this brief glance at the early history of the Grand River valley. The physical conformation of the country is homogeneous throughout its whole extent. It is a succession of flat meadows fringed with rich timber along the margin of the long, winding streams, these meadows themselves fringing the elevated table-land or ridges of rich, well-watered and well-drained prairies. The table-lands themselves conform to the sinuosities of the streams, which, by-the-way, are of great length usually, as most of the tributaries of the rivers, like their parent stream, have their sources on the southern inclination of the summit which divides the waters of the Missouri and Des Moines Rivers, at perhaps an elevation of about twelve hundred feet above the level of the Missouri River, at Brunswick. We must not omit here to mention that many of these ridges turn northwardly on a direct line into the heart of Iowa, and that they furnish as eligible location for cheaply constructed railways, with all the materials at hand, (except the iron,) as any country in America.

There is an abundance of cheap water-power afforded by Grand River and its tributaries, both in Iowa and Missouri. Cain's Mill in Harrison; Shaffer's in Mercer; and Kelsey's, Cooley's, and others in the same county; Graham's and McDonald's in Grundy; Scott's in Daviess; Waldrip's, Hoy and Chadwick's at Utica; and, finally, the Bedford Rapids, in Livingston County, are a few which have sprung up in the past few years, and for manufacturing furnish every advantage. These were in an unsettled, almost unknown wilderness at the time Wetmore wrote his Gazetteer. The Rapids at Bedford, where the volume of water is such as to offer no very serious impediment to navigation, which has for the past three years been successfully accomplished, will, at some future time, with properly applied energy and capital, furnish the seat for large manufacturing establishments unexcelled in any of the States.

Underlying all this vast territory are valuable beds of bituminous coal, in veins of from six inches to three feet. These veins crop out at Bedford and above. The lower and more valuable veins are beneath a good roof of shale and slate. Vast ledges and cliffs of both lime and sandstone are found in almost every neighborhood, though not so widely disseminated as to make them conveniently accessible to every settler.

In this article we have not spoken particularly of the coal formations in Chariton County, because we reserve that subject for our article on that county alone, which will be found in its proper place in this volume.

Very few of those counties above enumerated, except Chariton and Carroll, have had a corporate existence longer than twenty years. Chariton, which was organized in 1831, just after Missouri entered the Union, extended from the Missouri River to the Iowa line; Carroll, which was organized a year or two later, had formerly been a part of Ray, which then comprised all the territory west of Chariton County to Platte, and from the Missouri River to Iowa. The aggregate taxable property now in the thirteen counties is not less than twenty-five millions. They contain about twenty thousand voters, and perhaps a population, slave and white, of over one hundred and fifty thousand souls. In area the Grand River country is about one-fifth of the State of Missouri, and the entire valley in Iowa and Missouri is about one-hundredth part of the territory acquired from France.

The timber most abundant in this valley are the various kinds of oak, of which there are one or two varieties not known in most of the Southern States. Some four or five varieties of hickory, pecan, in the southern part of it; cottonwood, linn, in some locations; sugar-tree and maple, ash, honey locust, water birch, and walnut of great size, of which the lumber is principally made for building. The oak timber has proved of great value, as from it are now being built at the Brunswick ship-yards hulls for steamboats which have begun to acquire a high reputation. The forks and knots of the walnut have afforded for several years quite a trade for some enterprising men, who hew them in blocks of convenient size and ship them to Cincinnati; and some of them are returned, no doubt, to the country where they grew, in the shape of furniture. The Grand River country produces all the timber of the Southern States except pine, cedar, poplar, and larch. The poplar does not grow in such high latitudes, and the larch is not known west of Illinois.

GEOLOGY.

MINERAL AND AGRICULTURAL RESOURCES OF MISSOURI.

BY G. C. SWALLOW, STATE GEOLOGIST.

In presenting a systematic view of the **Mineral** and **Agricultural** resources of our State, it will be necessary to give a brief exhibit of the **Geology** as developed by the researches of the Geological Survey.

Stratified Rocks.

So far as observed, the stratified rocks of Missouri belong to the following systems:—

System I.—Quaternary.
System II.—Tertiary.
System III.—Cretaceous.
System IV.—Carboniferous.
System V.—Devonian.
System VI.—Silurian.

SYSTEM I.—QUATERNARY.

Previous to the commencement of the Geological Survey of Missouri but little effort had been made to trace out and classify the various deposits of the Quaternary System. This fact and the vast importance of these formations, both in our scientific and in our economical geology, have led us to undertake a careful investigation of this system as developed in our State. The results of our early investigations were given in the Second Annual Report of the Missouri Survey in 1854. This paper will include the facts there recorded, and those observed in our subsequent examinations, that it may present a full view of the present state of our knowledge upon this subject.

When it is remembered that these formations contain the entire geological record of all the cycles from the end of the Tertiary period to the present time, and that their economical value is greater than that of all the other formations combined, I shall need no apology for entering somewhat into details in recording the phenomena they present.

The **Quaternary System** comprises the drift and all the deposits above it—all the strata included in the alluvion and diluvion of former authors. There are, within this period, four distinct and well-

marked **Formations** in this State, which we have thus named in the order of their stratigraphical position.*

F. a.—Alluvium.	**F. c.—Bluff.**
F. b.—Bottom Prairie.	**F. d.—Drift.**

All of the latest deposits, all that have been formed since the present order of things commenced upon our Continent, are included in—

F. a.—Alluvium.

All the deposits observed in the State, belonging to this formation, are:—

1*st.* *Soils.*	4*th.* *Vegetable Mould or Humus.*
2*d.* *Pebbles and Sand.*	5*th.* *Bog Iron Ore.*
3*d.* *Clays.*	6*th.* *Calcareous Tufa.*
	7*th.* *Stalactites and Stalagmites.*

1st. **Soils** are a well-known mixture of various comminuted mineral substances, combined and mingled with decayed vegetable and animal remains, all comprising those ingredients peculiarly adapted to the nourishment of the vegetable kingdom. They are formed by the action of water, particularly in the form of rain and dews, cold, heat and other atmospheric influences, together with the co-operation of the vegetable and animal kingdoms.

The process by which soils are formed is one of the most beautiful and wonderful in nature. By a careful examination of what is transpiring in this great laboratory of nature, we may easily detect that process. If a rock, fresh from the quarry, be exposed, its surface will soon present a dull, earthy appearance, which is caused by a disintegration of its surface by atmospheric influences. Fine particles have been separated from the mass, and this meager coating of decomposing mineral matter will soon become the resting-place of numerous microscopic germs, which will be developed into a minute growth of lichens. These in turn will decay and add their remains to the pulverized particles, and prepare them to sustain a more vigorous growth of herbs, and to become the abode of the small insects and worms, which will burrow in their recesses, feed upon the increasing vegetation, and swell the mass both by their mechanical agency and by adding their exuviæ to the accumulating soil. Larger plants and animals will accelerate the process by their more powerful agencies and by the greater amount contributed by their

* See the general section of the rocks of Missouri in the *Second Annual Report.*

decaying remains. Thus by almost imperceptible increments our rich deep soils have been accumulated.

But the soils of Missouri are made up by the mingling of organic matter with the comminuted marls, clays, and sands of the quaternary deposits which cover all parts of the State, with a vast abundance of the very best materials for their rapid formation. Hence the soils of the State are very deep and wonderfully productive, save in those limited localities where the materials of the quaternary strata are unusually coarse or entirely wanting. But I shall speak more particularly of the soils, while treating of the rocks from which they were formed.

2d. **Pebbles and Sand.**—Many of our streams abound in water-worn pebbles, which constitute their beds, and form bars along their margins and across their channels. These pebbles were derived from the drift and the harder portions of the adjacent rocks. They vary in size according to the transporting power of the streams in which they are found.

The economical value of these pebbles for roads and streets, and the obstruction they often present to navigation, as in the Osage, give them unusual importance in our Geology. The Osage, Gasconade, Niangua, Marais des Cygnes, Sac and Spring Rivers of the South, and the Salt, South, North, Fabius, and Chariton of the North, all furnish good and abundant examples of these deposits, which have been formed by the action of those streams.

Sand is the most abundant material in the alluvial bottoms of the great rivers in the State. Vast quantities of it are constantly borne along by the irresistible current of the Missouri. Its whirling, rolling, turbulent waters form of it extensive bars in incredibly short periods, which they again wear away often still more rapidly than they were formed.

These sand-bars, so common in this stream, frequently extend along its bed several miles, with a breadth varying from one to five or six furlongs, and limited in thickness only by the depth of the water. A slight fall in the river leaves these vast sand-beds dry, when their surfaces are soon covered by a growth of weeds, interspersed with young willows and cottonwood.* The fickle stream, however, seldom leaves these sand-beds to a long repose, but returns to its old channel by a rapid removal of their loose materials.

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* The sand of the Missouri, usually grayish brown and fine grained, contains a considerable quantity of lime and clay and vegetable matter, which render it very productive.

A disaster to the ill-fated steamer *Timour*, No. 2, presents a good illustration of the rapidity with which the Missouri forms and destroys these extensive deposits of sand. In the fall of 1853 this steamer ran upon a sand-bar, and was soon left high and dry some seventy-five or one hundred yards from the water, with a fair prospect of leaving her timbers to decay in the young forest of willows and cottonwood which would soon spring up around her. But the current changed and cut its way through the sandy stratum upon which the boat rested, and floated her away uninjured to the great City of the West. And all this transpired in a few weeks.

As these sand-bars are cut away, their perpendicular faces present beautiful illustrations of their stratification, which is usually very irregular and complicated, as might be expected from the changeable character of the current.

But water is not the only agent engaged in producing the irregular stratification of the sand-bars of the Missouri and Mississippi Rivers. When these sand-beds become dry by exposure, the winds easily transport and rearrange their light and fine materials. Such quantities are moved by high winds, that the entire channels of the rivers are obscured by the dense clouds of moving sand. The stratification of the sand-beds thus formed is very interesting and complicated, and aids us in explaining some examples of stratification observed in the older rocks.

At high stages of water, both the Missouri and Mississippi overflow their low bottoms, and leave deposits of a grayish-brown or a grayish-yellow sand similar to that in the sand-bars mentioned above. The thickness of these beds depends upon the height and continuance of the overflowing waters, varying from a mere perceptible stratum to several feet.

That from the flood of 1844 is very conspicuous throughout the length of the Missouri bottom. It is sometimes six or eight feet thick, particularly in low bottoms, so heavily timbered as to obstruct the current.

At the lower end of Waconda Prairie this deposit is very evenly distributed over its surface; but it increases in thickness as the prairie descends to the low timbered bottom, lower down the stream, where it is six or seven feet, and its surface becomes very irregular, like the surface of a lake when disturbed by a high wind or a *chopped sea*.

The lower extremity of Waconda Prairie and the cottonwood bottom below finely illustrates these phenomena. The small timber is a young growth of cottonwood, which has sprung up since 1844,

and the larger trees just below is the older growth, which obstructed the waters flowing through the bottom, and thus caused the more abundant and irregular deposit there observed. Similar phenomena are exhibited in the bottoms opposite St. Charles and Jefferson City, and in many other places on the Missouri, and at several localities in New Madrid and Pemiscot Counties on the Mississippi.

These sands were doubtless derived from those extensive sandstone formations on the Platte* and other tributaries of the Missouri. It is nearly all silex, but contains enough calcareous and argillaceous matter to render it fertile, as is abundantly proved by the growth of weeds and willows, cottonwood and sycamores, which immediately spring up on these sand-bars whenever they are exposed above the water. There are many points on the Missouri, as in the bottom opposite St. Charles, where a thrifty growth of young timber may be seen on the sand deposits of 1844.

3d. **Clays.**—These are dark, bluish-gray, argillaceous strata, rendered more or less impure by fine silicious, calcareous, and decomposed organic matter. When the floods of the Mississippi and the Missouri subside, the lagoons, sloughs, and lakes are left full of turbid water. The coarser materials soon settle into a stratum of sand, but the finer particles more gradually subside and form the silico-calcareous clays of their alluvial bottoms. Thus, after each flood new strata of sand and clay are deposited until the lakes and sloughs are silted up.

The thickness of each stratum of sand depends upon the height and continuation of the floods, but that of the clay-beds is governed more by the time between the overflows, and is very variable, ranging from the tenth of an inch to ten feet.

The argillaceous materials which formed them were doubtless derived from the cretaceous and tertiary clays of the Upper Missouri and its tributaries, whence, as from the *Mauvaises Terres*, such vast quantities of a similar material have been removed by denudation.

4th. **Vegetable Mould** or **Humus** is a dark-brown or black deposit of decayed vegetable matter, containing variable, though small, quantities of fine silicious and argillaceous particles. When wet it is very soft and plastic, and quite black; but when dry, it separates into angular cuboidal fragments, which readily crumble into a dark-brown, very light, impalpable powder. In these beds of almost homogeneous

* The Platte is a rapid stream, and brings down large quantities of sand, though its waters are not so turbid as those of the Missouri, either above or below their junction.

humus, leaves and stems of trees are sometimes found in a tolerable state of preservation.

The process by which these strata of humus are deposited is very obvious. When the lakes and sloughs of these bottoms are so far filled up as to sustain vegetable life, the decay of the annual growth, and of the foreign matter which falls or floats into these waters, forms a stratum of humus at the bottom, over the beds of clay and sand previously deposited by the floods and still waters. Another overflow gives another succession of sand and clay, and the succeeding annual crop of vegetable matter another stratum of humus.

These changes have often continued until several series of these deposits were formed. But when the bottoms of those bodies of water had been thus raised so high above the river that the floods less frequently flowed into them, the deposits of sand diminished, and the long, quiet intervals favored the deposition of clay and humus. In time, these shallow waters became mere marshes where a rank vegetation rapidly formed thick beds of vegetable mould for the support of the magnificent forests which now occupy the sites of those former lakes and sloughs.

Such is the process by which the succession of sands, clays, and humus in those alluvial bottoms has been deposited; whence it is easy to see why the sands are most abundant at the bottom, when the waters from the river floods would more frequently overflow them; the clays in the middle, when the waters would be rarely disturbed by overflows; and the humus or vegetable mould at the top, when a rank vegetation prevailed and inundations were rare.

Sections 3 and 4 of our 2d Annual Report are good illustrations of the manner in which these strata of sand, clay, and vegetable mould succeed each other in the alluvial bottoms of our two great rivers.

Such is the structure of the vast alluvial plains bordering the Missouri and Mississippi Rivers. The bottom of the former stream, extending from the Iowa line to its mouth, is about 700 miles long and five broad, presenting an area of 3500 square miles. More than one-half of this, say 2000 square miles, may be set down as alluvium, while the river, bottom prairies, and lakes occupy the remainder. On the Missouri side of the Mississippi bottom there are about 4300 square miles of alluvial bottom of a similar character. Thus the alluvial bottoms of our two great rivers alone give more than 4,000,000 acres of land based upon these alluvial strata of sands, clays, marls, and humus. And, besides, the quantity is constantly increasing by the silting up of the sloughs and lakes as above described.

The soil formed upon these alluvial beds is deep, light, and rich almost beyond comparison, as is abundantly proved by the immense burden of timber growing upon it, and by the unparalleled crops of hemp, tobacco, and corn harvested from its cultivated fields.

5th. **Bog-Iron Ore** is deposited from several chalybeate springs. Large quantities of the hydrated oxide have accumulated near a fine spring some two miles west of Osceola, and a small amount from another near Sharpsburg, in Marion County. But the most important deposits of bog-iron are situated in the cypress swamps and other low, wet portions of Southeastern Missouri. Extensive beds were traced out in Lake St. John, extending from the "Stake Glades" in Scott County to the "Iron Ore Ford" in New Madrid. Several large beds were observed in the southwestern part of Dunklin County, and two in the western part of Mississippi. These beds vary in thickness from one or two inches to two feet; while some of them are several miles in length. The quality of the ore is good, and the quantity very great, almost fabulous.

6th. **Calcareous Tufa** has been found in several places in the State. In a ravine south of Parkville is a mass, in which many specimens of moss are well preserved, and another similar deposit was observed under the bluffs near Bryce's Spring, on the Niangua.

7th. **Stalactites and Stalagmites** are abundant in some parts of the State. Many beautiful specimens were observed in the extensive caves of Boone, Camden, and Greene Counties.

Such are the alluvial deposits, so far as observed, in Missouri. Future investigations may bring to light others belonging to this formation.

Range and Thickness.—Our alluvium is, as a matter of course, diffused throughout the entire State, as it comprises all the soils and other deposits now forming. It is, however, much more abundant in the valleys of our great streams. The thickness is often thirty or forty feet, though generally much less.

F. b.—Bottom Prairie.

This important formation in many respects resembles that of the *alluvial bottoms* above described, with which it has usually been confounded by geologists, though agriculturists have made a distinction.

There are, however, important differences:—

1st. The stratification in the prairie is much more uniform, and more regularly extended over wide areas.

2d. In the prairie formation the strata are not so distinct, nor are they so purely silicious or argillaceous.

3d. It was evidently formed by agencies operating over the entire bottoms, whose action was more uniform and quiet, and continued uninterrupted through longer periods than those now forming the alluvial deposits in the same bottoms.

4th. Where these two formations meet one can usually trace out the line of demarkation. Either the strata of the prairie pass under those of the alluvium or are cut off and replaced by them. Instances of both of these changes may be observed at the lower end of Waconda Prairie, and other places on the Missouri.

5th. The alluvial bottom is continually increased at the expense of the prairie, through the action of the rivers. The current is constantly cutting away the prairie, forming new channels and filling up the old ones with drift and silt. This explains the fact that the strata of the prairie are frequently cut off, and others quite different set in, as we pass from it to the timbered bottoms. At high stages of water the lower portions of the prairie are overflowed, and deposits of sand are left on its surface which are soon covered with willows, sycamores, or cottonwood, as on the lower end of Waconda Prairie, where a young growth of cottonwood has sprung up on the deposits from the flood of 1844.

6th. No causes now in operation could, at the present level of the country, produce a formation of such extent and uniform structure as the bottom prairies.*

Such are some of the facts which have convinced me that this is an older formation, and one entirely distinct from the alluvial bottoms. Several facts show it to be distinct from and newer than the Bluff or Loess. Its composition, structure, and position are entirely different, and in many places the former rests non-conformably upon the latter, as at St. Joseph, and at the mouth of the Big Nemaha.

This formation, like the last, is made up of sands, clays, and vegetable mould variously interstratified.

The **Sand** in the upper part is fine and yellowish brown, like that of the Missouri sand-bars, but the lower beds are more purely silicious.

The **Clays** are usually dark, bluish brown, and marly, with more or less sand and humus intermingled.

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* Some of the bottom prairies of the Missouri are at least thirty miles long, and from ten to twenty broad, as the Huppan-Kuty of Nicollett, above the mouth of the Sioux River, and the Waconda, in Carroll County. And these are probably only fragments of one which was once continuous from the former to the mouth of the Missouri.

The **Humus or Vegetable Mould** has a brownish-black color; when wet, it is somewhat plastic and slightly tenacious; when dry, brittle, breaks into angular fragments, and can be easily reduced to an impalpable powder. These beds of humus were evidently formed by the growth and decay of plants in the localities where they are found.

Range and Thickness.—This formation is confined to the bottoms of the Missouri and Mississippi Rivers, and is more abundant and better characterized on the former. The bottom prairie is about half as extensive as the alluvial bottoms above described, is made up of the same materials, and sustains a soil of equal fertility. This estimate will give us about two million acres of these vastly rich savannas, all prepared by Nature for the plow. Their agricultural capacities are scarcely inferior to any in the world, as is abundantly demonstrated by the mineral contents of the strata and the products of the numerous flourishing farms located upon them.

The **Organic Remains** of the bottom prairie are numerous and well preserved. All the shells of the bluff, save the *Helicini occulta*, have been found in it; but no remains of the elephant or mastodon have yet been detected. We have collected many species of trees, shrubs, and vines from these beds.

The character and position of the strata forming the bottom prairie show most conclusively that the level of the country, when they were deposited, was somewhat different from its present condition, that bodies of almost still water covered the present valleys of our great rivers, and that the formation was coextensive with these river bottoms. Subsequently such a change of level occurred as gave the present rapid current to the waters passing through these valleys. The rapid waters cut channels in their soft beds, and left broad, level areas dry and subject to vegetable life. These "bottom prairies" extended from the mouth of the Sioux to the Mississippi, and probably from the St. Peter's to the Arkansas. Since that period the rivers have been ever busy, wearing away the bottom prairie and depositing the alluvial bottom above described, until we have but few remnants, such as the Waconda and Huppan-Kuty, of the vast bottom prairie, which occupied these great valleys. Like the Indians of the Western prairies, they are fast "passing away."

These beautiful savannas are universally called "**Bottom Prairie**;" and I have proposed that as the geological name of the interesting formation on which they rest.

The scenery of the alluvial bottom and the bottom prairie is well represented in section 2 and plate 12 of the Second Geological Report.

F. c.—Bluff.

This formation rests upon the drift, as is obvious wherever the two formations are well developed. In many places, as at St. Joseph and at the mouth of the Big Nemaha, it is seen dipping beneath the beds of the bottom prairie. While the bluff formation rests upon the highest ridges and river bluffs, and descends along their slopes to the lowest valleys, the bottom prairie is confined to the river bottoms, and was deposited in horizontal beds between the bluffs. Thus, while the bottom prairie occupies a higher geological horizon, the bluff is usually several hundred feet above it in the topographical.

This formation, when well developed, usually presents a fine, pulverulent, obsoletely stratified mass of light, grayish-buff, silicious, and slightly-indurated marl. Its color is usually variegated with deeper brown stains of oxide of iron. The bluff above St. Joseph exhibits an exposure of it one hundred and forty feet thick, presenting its usual characteristic features.

When but sparingly developed it generally becomes more argillaceous, and assumes a deeper brown or red color; as on the railroad south of Palmyra, where it is a dark, brick red, tinged with purple. In some places the ferruginous and calcareous matter increases, and we find concretions of marl and ironstone, either disseminated through the mass or arranged in horizontal belts. At other places it has more arenaceous matter, and is much more decidedly stratified, as at a point one mile above Wellington, and in the bluff at St. Joseph.

These are the only places seen where the stratification assumed the irregular appearance so often presented by sand-bars. It is barely possible that this stratified sand is a portion of **Altered Drift**; but the beds between it and the drift, having the usual appearance of the bluff, militates against such a supposition.

The bluff formation is often penetrated by numerous tubes or cylinders about the size or thickness of pipe-stems, some larger and others smaller. They are composed of clay, carbonate of lime, and oxide of iron, being argillo-calcareous oxide of iron, or calcareous clay ironstone. But it is not so easy to say how they were formed. Several facts may aid us in determining this matter. These tubes penetrate the formation in all directions, and are most abundant near the surface, though some extend to the depth of twenty feet. The space for some half inch around each tube, more or less, according to its size, is of a much lighter color; as if the coloring matter (oxide of iron) had been extracted.

The same appearances were observed around the green and dry roots

of the white oak, (*quercus alba,*) which had penetrated the same formation. Qualitative analyses proved these same roots to contain a large portion of oxide of iron. And besides, oak-wood always contains a large portion of that metal and manganese. An analyses of its ashes, by Saussure, gave two and a quarter per cent. of the oxides of those metals; while the analysis of "oak-wood mould," or the decayed wood, by the same chemist, gave fourteen per cent. of the same oxides.

It is thus made manifest that oak-wood contains iron, which must have been absorbed through the roots from the earth. This fact readily explains the loss of the iron from the marl around the roots and around the tubes, provided they were once oak-roots. But the question naturally arises, how these roots became tubular? But they were seen in the various stages of decay, and the woody fibers of some had disappeared and left the bark, in the form of a tube, still retaining its organic structure, though strongly impregnated with the oxide of iron and aluminum and carbonate of lime.

It may also be objected that the roots of the oak do not penetrate to such depths; but, in the language of a poet and a botanist:—

> "Æsculus in primis; quae quantum vertici ad auras,
> Ætheras, tantum radice in Tartara tendit."

These facts have led to the conclusion that these tubes of calcareous clay and ironstone are the decayed roots of oaks and other plants. In some localities small holes, also, without any tubes of different material, penetrate this formation in great numbers, and are probably caused by similar agencies.

These phenomena have been thus minutely investigated, not merely as interesting scientific facts, but also as one of the most useful agricultural features of this pre-eminently valuable formation; for upon it, and sustained by its absolutely inexhaustible fertilizing resources, rest the very best farms of the Mississippi and Missouri valleys. These tubes and holes also constitute the *most thorough system of drainage* imaginable.

Range and Thickness.—So far as my own observations extend, this formation caps all the bluffs of the Missouri, from Council Bluffs to its mouth, and those of the Mississippi, from the mouth of the Des Moines to that of the Ohio, and forms the upper stratum beneath the soil of all the high lands, both timber and prairie, of all the counties north of the Osage and Missouri, and also St. Louis, and the other Mississippi counties on the south.

According to Mr. Meek, its western or northwestern limit is probably a few miles below Fort Pierre; Lyell traces a similar formation up

the Ohio and farther down the Mississippi; Dr. Owen mentions its existence on the Wabash River; Dr. G. G. Shumard saw a similar deposit on Red River; Major Hawn traces this formation far up the tributaries of the Platte and Arkansas in Western Kansas, toward the golden sands of the Eastern Cordilleras.

The identity of the deposits at Council Bluffs, at St. Joseph, at Lexington, at Boonville, at Hannibal, at St. Louis, and at Cape Girardeau is placed beyond all doubt by the following facts:—

1st. They occupy the same geological position.

2d. They have the same topographical position on the tops of the bluffs.

3d. They present the same lithological and chemical characters.

4th. Nearly all the fossils are found at all those places, save perhaps the last.

5th. These localities are connected by an unbroken continuity of the same deposit.

Its greatest development in this State is in the counties on the Missouri, from the Iowa line to Boonville; but thence to St. Louis it is not so thick. In some places it is two hundred feet thick. At St. Joseph it is one hundred and forty; at Boonville one hundred; and at St. Louis, in St. George's Quarry, and the Big Mound, it is about fifty feet; while its greatest thickness observed in Marion County was only thirty.

Organic Remains.—The fossils of the Bluff are very numerous and interesting. We have collected from it, of the Mammalia, two teeth of the *Mastodon giganteus*, *Elephas primigenius;* the bones of a *Bison;* the jaw-bone of the *Castor fiber Americana;* the molar of a *Ruminant;* and the incisor of a *Rodent.* Of the Mollusca, seventeen species of the genus *Helix*, eight *Limnea*, eight *Physa*, three *Pupa*, four *Planorbis*, six *Succinea*, and one each of the genera *Valvata*, *Amnicola*, *Helicina*, and *Cyclas*, besides some others not determined. These *lacustrine*, *fluviatile*, *amphibious*, and *land* species indicate a deposit formed in a fresh-water lake, surrounded by land and fed by rivers. These facts carry back the mind to a time when a large portion of this great valley was covered by a vast lake, into which, from the surrounding land, flowed various rivers and smaller streams. We see the waters peopled with numerous mollusks; the industrious beaver building his habitation; the nimble squirrel, the fleet deer, the sedate elephant, and huge mastodon, lords of the soil. There must have been land to sustain the elephant, and mastodon, and helices; fresh water and land for the beaver; and fresh water for the Cyclas and Limneas.

Some have supposed this formation was deposited by the rivers when the waters were at a higher stage. If it was deposited by the rivers, their waters were high enough to cover nearly all of this State and a large part of the adjoining States and Territories, and quiet enough to be the abode of Limneas and to be called a lake.

I have proposed the title **Bluff Formation** for this deposit, as it forms a large portion of, and gives the peculiar characters to the bluffs so conspicuous and unique in the scenery about Council Bluffs and other portions of the Missouri valley, and as it forms the tops of the bluffs wherever it is developed.

Loess, the name of a similar formation on the Rhine, has been given to this by some geologists. But this would imply that these two formations are identical, when they may or may not be, so far as any proof has been given. It is true they are both fresh-water deposits, both have recent shells of the same genera, and in lithological and chemical characters they are somewhat similar. But there are other deposits, whose Fauna and lithological and chemical properties are quite similar to the Bluff, and some of them more so, and yet they are more recent.

There is just as much evidence of the identity of the Loess and the Bottom Prairie, as there is of the Loess and the Bluff; and still we know the Bluff was formed long before the Bottom Prairie, and under a very different condition of this part of the continent. It may also be stated that there is just as much evidence of the identity of the Bluff and the Bottom Prairie, as of the Bluff and Loess; and yet the Bluff and Bottom Prairie are not identical. The fossils of all three formations only prove they belong to the Quaternary System, or were formed since some of the present Fauna came into being.

There is, indeed, but little probability that two such vast fresh-water lakes existed at the same time on the two continents, with the ocean rolling between.

But it would seem impossibe to identify formations so recent on separate continents, whose recent Faunas are so widely different; as the deposits on these continents, though contemporaneous, would of necessity present Faunas very distinct. Hence if we make fossils our only guide in identifying them, it will be impossible to distinguish deposits formed since the present genera of animals and plants came into existence; and we should be compelled to omit all distinctions between formations of the recent period and to make all of our recent deposits identical with each other, and with all belonging to the same system in Europe and Asia; and this would deprive us of

distinctions recognized in Scientific, and almost indispensable in Economical Geology.

I have been thus minute in my examinations of the Bluff, the Bottom Prairie, and the alluvial formations, both on account of their vast importance to our agricultural interests and the comparatively little attention geologists have given to them. It is to this formation that the central Mississippi and Southern Missouri valleys owe their pre-eminence in agriculture. The most desirable lands of Iowa, Missouri, Western Illinois, Kansas, and Nebraska, all rest upon the fine silicious marls of the bluff formation. Where it is best developed in Western Missouri, the soil is inferior to none in the country.

The scenery presented by the bluff formation is at once unique and beautiful, and gives character to nearly all the best landscapes on the Lower Missouri. Plates I. and II. of the Missouri Reports give characteristic views of the scenery where this formation is well developed.

F. d.—Drift.

This formation lies directly beneath the bluff, and rests upon the various members of the paleozoic series as they successively come to the surface of that system.

In this formation there appear to be three distinct deposits:—

1st. What might be called an **Altered Drift** frequently appears in the banks of the Missouri River, as at the mouth of the Kansas, and in the Bottom Prairie below Brunswick, and at Waconda Prairie, Section 2, No. 4. These strata of sand and pebbles appear to be the finer materials of the drift, removed and rearranged by aqueous agencies subsequent to the drift period and prior to the formation of the bluff. The pebbles are from all the varieties of rocks found in the true drift, but are comparatively small.

2d. **The Boulder Formation,** as it was left disturbed by those powerful and widely-extended agencies which formed that deposit of the northern hemisphere. It is a heterogeneous stratum of sand, gravel, and boulders, all water-worn fragments of the older rocks. The larger part are from the igneous and metamorphic rocks, in place at the north, and the remainder from the paleozoic strata upon which they rest. The metamorphic and igneous rocks must have come from the northern localities of those strata, the nearest of which, according to Dr. Owen's Report, is on the St. Peter's River, about 300 miles north of St. Joseph. But the paleozoic fragments are usually from localities near where they rest, as shown by the fossils they contain, and are as *completely rounded* as those from the more distant points.

The largest boulders observed in Missouri are five or six feet in diameter. They are usually granite and metamorphic sandstone.

3d. **Boulder Clay.**—In Northern Missouri, the boulder formation just described often rests upon a bed of bluish or brown sandy clay, through which pebbles of various sizes are disseminated in greater or less abundance. In some localities this deposit becomes a pure white pipe clay.

Range and Thickness.—The **Altered Drift** has been observed more frequently in the northwestern part of the State, and is often twenty-five or thirty feet thick. The **Boulder Formation** abounds in all parts of the State north of the Missouri, and exists in small quantities as far south as the Osage and Maramec. Its thickness is very variable, from one to forty-five feet. Its development is greater, the boulders larger, and those of a foreign origin more numerous toward the north. Its thickness varies from one to fifty feet. The **Boulder Clay** is also most abundant in the northern part of the State, and is, in some places, more than 100 feet thick.

Organic Remains.—I have seen no fossils in this deposit, save a few logs in the altered drift of the Missouri. Some of these are still sound, and burn quite well when dry, as we proved when building our camp fires with them on several occasions.

There are other deposits, particularly in the middle and southern parts of the State, which are not genuine drift, and yet they bear a greater resemblance to that than any other formation, and occupy precisely the same stratigraphical position.

Beneath the alluvium of the bottoms we often find deposits of pebbles similar to the genuine or altered drift of the Missouri; but all the materials came from the neighboring rocks, somewhat worn, and indiscriminately commingled with sands and clays.

Whether these deposits were formed by the same agencies which produced the drift, or by a part of them only, or by other causes, has scarcely been determined.

SYSTEM II.—TERTIARY.

There is a formation made up of clays, sands, and iron ores, more or less indurated, extending along the bluffs and skirting the bottom, from Commerce, in Scott County, westward to Stoddard, and thence south to the Chalk Bluffs, in Arkansas.

The following section, obtained in the neighborhood of Commerce, will give a good idea of the character of these beds. The strata are numbered in their natural order, from the top down.

No. 1. 9 feet.—Pebbles, sand, and clay intermingled.

No. 2. 2 feet.—Sand and iron ore—brown hematite.

No. 3. 10 feet.—Brown and buff sand interstratified.

No. 4. 12 feet.—Buff and white sand interstratified, containing rounded masses of sandstone, of the same character and color as the sand forming the strata.

No. 5. 5 feet.—Clay and gravel of a bright chrome yellow.

No. 6. 1 foot.—Clay and hematite ore—nearly all iron.

No. 7. 47 feet.—Blue shale, which separates on exposure into rhomboidal masses.

No. 8. 2 feet.—Carbonate of iron in septaria and nodular masses, or in regular strata, which break into rhomboidal masses.

No. 9. 6 feet.—Blue shale, like No. 7.

No. 10. 1 foot.—Iron ore, like No. 8.

No. 11. 11 feet.—Blue shale, like No. 7.

No. 12. $1\frac{1}{2}$ feet.—Carbonate of iron, like No. 8.

No. 13. 31 feet.—Blue shale, like No. 7, with some thin bands and nodules of iron ore.

No. 14. 7 feet.—Sandy clay, with thin strata and nodular masses of hematite ore.

No. 15. 18 feet.—White sand interstratified with thin brown strata, containing some rounded masses of sandstone.

No. 16. 5 feet.—Sand of a light peach-blossom color interstratified with brown beds.

No. 17. 12 feet.—White sandstone in thick beds. The upper part is hard and vitreous, but the lower is soft and friable. This rock very much resembles the saccharoidal sandstone of the calciferous series, and appears to have been much worn by running water.

No. 18. $\frac{1}{12}$ foot.—Very hard, compact oxide of iron. It is strong and rings like pot-metal.

No. 19. 20 feet.—Salmon-colored, white, purple, and yellow sands interstratified with clays of the same colors.

No. 20. 1 foot.—Spathic iron ore.

No. 21. 13 feet.—Blue potter's clay.

214 feet.—Total thickness.

I have observed no fossils in these beds, except the impression of a leaf on the sandstone of No. 17. In the absence of any positive proof of the age of this interesting strata, I have marked them tertiary, in deference to their close resemblance to the tertiary rocks of the Mississippi valley, until future discoveries shall show their true position.

The Iron Ore of these beds is very abundant and exceedingly valuable. The spathic ore has been found in no other locality in South-

eastern Missouri, so that the large quantity and excellent quality of these beds will render them very valuable for the various purposes to which this ore is peculiarly adapted.

The **White Sand** of these beds will be very valuable for glass making, and for the composition of mortars and cements.

The **Clays** are well adapted to the manufacture of pottery and stoneware.

SYSTEM III.—CRETACEOUS.

Beneath the tertiary beds above described, in the bluffs of the Mississippi above Commerce, the following strata were observed :—

No. 1. 13 feet.—Soft argillaceous sandstone variegated with gray, brown, and white.

No. 2. 20 feet.—Soft, bluish-brown, sandy slate, containing large quantities of iron pyrites.

No. 3. 25 feet.—Whitish-brown, impure sandstone, banded with purple and pink.

No. 4. 45 feet.—Slate, like No. 2.

No. 5. 45 feet.—Fine white silicious clay interstratified with white flint more or less spotted, and banded with pink and purple.

No. 6. 10 feet.—Purple, red, and blue clays.

158 feet.—The entire thickness.

These beds are very much disturbed, fractured, upheaved, and tilted, so as to form various faults and axes, anticlinal and synclinal, while the strata above described as tertiary are in their natural position, and rest non-conformably upon these beds. These facts show the occurrence of great disturbances subsequent to the deposition of these beds and anterior to the formation of the strata above.

We have no clew to the age of these rocks, save that they are older than the tertiary (?) beds above and newer than the Trenton limestone below. They somewhat resemble some cretaceous beds found in several places on this part of the continent; and these facts have led me to the inquiry whether they are cretaceous. Our future investigations may show their true position.

We have observed no fossils in these rocks.

SYSTEM IV.—CARBONIFEROUS.

This system presents two important divisions:—

Upper Carboniferous or **Coal Measures**;

Lower Carboniferous or **Mountain Limestone.**

The **Coal Measures** are made up of numerous strata of sandstones, limestones, shales, clays, marls, spathic iron ores, and coals. We have

observed about fifteen hundred feet of these coal measures, containing numerous beds of iron ore, and at least eight or ten beds of good workable coal.

These rocks, with the accompanying beds of coal and iron, cover an area of more than 27,000 square miles in Missouri.* If a line be drawn from the northeastern corner of the State through Clark, Lewis, Shelby, Monroe, Audrain, Callaway, Boone, Cooper, Saline, Henry, St. Clair, Cedar, and Dade Counties to the middle of the western boundary of Jasper, this irregular boundary will separate the great body of the coal measures on the northwest from the older rocks on the southeast. Besides the large body of coal measures on the northwest side of this line, there are extensive beds in Cole, Moniteau, St. Charles, St. Louis, and Callaway Counties.

The common *bituminous* and *cannel* coal are the only varieties of this mineral observed. These exist in vast quantities; one might almost say *inexhaustible*.

The fossils are numerous and interesting.

So far as our observations extend, in Missouri, the *Fusulina cylindrica, Spirifer cameratus, S. plano-convexus, S. hemiplicatus, S. lineatus, S. perplexus, S. Boonensis, S. Kentuckensis, Spirigera Missouriensis, S. Maconensis, Productus splendins, P. æquicostatus, P. Nebrascensis, P. Wabashensis, P. Boonensis, Chonetes mesoloba, C. parva, C. Smithi, Myalina subquadrata, Allorisma regularis, A. ensiformis, A. terminalis, Leda arata, Pleurotomaria sphaerulata, Campophyllum torquium, and Chætetes milleporaceus,* are confined to, and very characteristic of the coal measures.†

The discovery of the fact that these fossils are confined to the coal measures has enabled us to point out the existence of the coal measures and the coal beds contained in them, over an area of many thou-

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* The Missouri coal basin is one of the largest in the known world. Besides the 27,000 square miles in Missouri, there are in Nebraska at least 10,000 square miles, in Kansas 23,000, in Iowa, according to Dr. Owen, 20,000, in Illinois 20,000 (?) making in all at least 100,000 square miles. And we may expect the explorations of Major Hawn in Kansas, and others in Nebraska, will add much more.

† So far as I know, the Second Annual Report of the Missouri Survey made known the very striking and important difference between the fossils of the coal measures and the lower carboniferous rocks of the Mississippi valley. It was also shown in the same report that some at least of the different beds of limestone in the coal measures could be distinguished by their fossils. This is another application of the use of fossils of vast importance in tracing out the position of the various coal-beds in these rocks.

sand miles, where geologists had supposed no coal measures and no coal existed.

Of the Lower Carboniferous rocks we have observed the following formations:—

Ferruginous Sandstone—175 feet.
Upper Archimedes or **Kaskaskia Limestone**—250 feet.
Prairie du Rocher Sandstone—195 feet.
Middle Archimedes or **St. Genevieve Limestone**—50 (?) feet.
St. Louis Limestone—225 feet.
Lower Archimedes or **Keokuk Limestone**—350 feet.
Encrinital Limestone—550 feet.

The **Ferruginous Sandstone** is variable in its lithological characters. In some places it is very white and saccharoidal; in others, fine, impure particles are disseminated through the mass, and the color becomes a dirty brown; and in a few localities, as near Fulton, Callaway County, it is a coarse conglomerate. But generally, where well developed, it is a coarse-grained, heavy-bedded, friable sandstone, colored with various shades of brown, red, and purple, as it appears in the bluffs near Salt Creek, Sulphur Springs, some two miles west of Oceola, township 38, range 26, section 27; or clouded with yellow and red, as on Turkey Creek, in Cedar County. The upper part is more regularly stratified and finer grained, contains more argillo-calcareous matter, and has a lighter brown, yellowish gray or cream color. It is very soft when quarried, and may then be easily dressed for building purposes; but exposure renders it much harder and more durable.

This sandstone contains large quantities of oxides of iron, brown and red hematites, which in many places form extensive beds of excellent ore. In Cooper County, in the northeast quarter of section 3, township 48, range 19, this sandstone, in the bluffs of the Black Water, contains a good bed of ore, three feet thick. The same bed again shows itself in several places in section 33, township 48, range 19, and in various other places in the county. It was also observed in large masses on Grand River, in Henry County; in section 28, township 39, range 24, in St. Clair County; and in Bates and Hickory; and in still greater abundance in the western part of Greene County.

The large quantities of iron in this standstone has led me to designate it the **Ferruginous Sandstone.** It is found skirting the eastern border of the coal measures, from the mouth of the Des Moines to McDonald County.

The Upper Archimedes or **Kaskaskia Limestone** is found under-

lying the ferruginous sandstone in St. Genevieve County, and in several places on the Illinois side of the Mississippi. This formation is made up of beds of blue limestone and blue shales variously interstratified.

At Chester, Illinois, we find the following section of these rocks:—

No. 1. 90 feet.—Blue and grayish limestone interstratified with thin strata of blue shales.

No. 2. 58 feet.—Blue shales with purple and gray beds intercalated.

No. 3. 9 feet.—Bluish gray, coarse-grained and thin-bedded limestone, interstratified with blue shale.

The fossils most characteristic of these beds are: *Spirifer increbescens, Athyris subquadrata, Fenestella lyra, Pentremites sulcatus, P. pyriformis*, and one species of *Archimedipora.*

Prairie du Rocher Sandstone.—This is usually a light-brown, thick-bedded, friable sandstone, which sometimes contains numerous pebbles of quartz and jasper.

It appears in heavy mural bluffs on the Mississippi, in St. Genevieve County, and at Chester and Prairie du Rocher, on the Illinois side. Its thickness varies from 20 to 100 feet.

Middle Archimedes or St. Genevieve Limestone.—In lithological characters, these rocks are very much like the Upper Archimedes limestone—bluish-gray crystalline limestones intercalated with thin strata of blue shale.

The fossils most abundant are *Spirifer spinosa, S. Leidyi, Spirigera hirsuta, Retzia vera, Productus elegans*, and one or more species of *Archimedipora.*

These rocks are exposed in the bluffs of the Mississippi on both sides of the river below St. Genevieve.

The **St. Louis Limestone** is made up of hard, crystalline, and compact gray and blue, somewhat cherty limestones, interstratified with thin partings of blue shale.

Its stratigraphical position is between the Middle and Lower Archimedes Limestones. It is found in Clark, Lewis, and St. Genevieve Counties; but attains its greatest development in St. Louis, from which the name is derived.

The most characteristic fossils yet described are *Palæchinus multipora, Lithostrotion mamillare, L. proliferum, Echinocrinus Nerei, Poteriocrinus longidactylus, Atrypa lingulata, Productus margini-cinctus, Spirifer Littoni.*

Lower Archimedes or Keokuk Limestone.—In this formation are

included the "*Arenaceous bed*," the "*Warsaw or Second Archimedes Limestone*," the "*Magnesian Limestone*," "*Geode bed*," and the "*Keokuk or Lower Archimedes Limestone*" of Professor Hall's section, and the lead-bearing rocks of Southwestern Missouri, which, though different from any of the above beds, are more nearly allied to them than to the Encrinital limestone below. All of the above beds are easily recognized in Missouri, save, perhaps, the Warsaw limestone, which is but imperfectly represented in our northeastern counties, where the "Keokuk limestone," the "Geode beds," and the Magnesian limestone" are well developed.

The most characteristic fossils described are: *Agaricocrinus tuberosus, Actinocrinus biturbinatus, Spirifer pseudo-lineatus, S. Keokuk, Orthis Keokuk*, and one or more species of *Archimedipora.*

This formation extends from the northeastern part of the State to the southwest, in an irregular zone skirting the eastern border of the Ferruginous sandstone. The extensive and rich lead deposits in Southwestern Missouri are in this formation. These mines occupy an area of more than 100 square miles in the Counties of Jasper and Newton.

The Encrinital Limestone is at once the most extensive and best characterized of the divisions of the Carboniferous limestone. It is made up of brown, buff, gray, and white, coarse crystalline heavy-bedded limestones. The darker-colored impure varieties prevail near the base, while the lighter and more purely calcareous strata abound in the upper part. It everywhere contains globular, ovoid, and lenticular masses of chert, disseminated or arranged in beds parallel to the lines of stratification. These masses of chert are more abundant in the upper beds; in fact, the upper beds are made up almost exclusively of this mineral.

The beds of this formation are frequently intersected by joints resembling the sutures of the cranium. The remains of corals and mollusks are very abundant; some of the strata are made up almost entirely of their exuviæ, especially of the joints and plates of *crinoideans*. In the southwest, these strata rest upon some seventy or eighty feet of hard, porous, and thick-bedded silicious rocks, which are included in this formation, as they have more affinities with it than with the Chemung below.

There are nine divisions of this formation in Missouri, which are quite well marked by their fossils and lithological characters. The Encrinital limestone extends from Marion County to Greene, forming an irregular zone on the east of the Archimedes beds.

The most characteristfc fossils are *Platycrinus planus, Actinocrinus pyriformis, A. Missouriensis, Orthis Swallovi, O. Michelino, Productus Burlingtonensis, Spirifer striates, S. plenus, S. lineatoides, S. Meeki, Euomphalas latus, Chonetes Shumardiana.*

SYSTEM V.—DEVONIAN.

The Devonian system in Missouri is made up of the four following groups:—

Chemung Group,	**Onondaga Limestone,**
Hamilton Group,	**Oriskany Sandstone.**

Chemung Group.—This group presents three formations very distinct in lithological characters and fossil remains. They have received the following provisional names:—

Choteau Limestone—85 feet.
Vermicular Sandstone and **Shales**—75 feet.
Lithographic Limestone—125 feet.

The **Chouteau Limestone**, when fully developed, is made up of two very distinct divisions.

1. At the top, immediately under the Encrinital limestone, we find some forty or fifty feet of brownish-gray, earthy, silico-magnesian limestone in thick beds, which contain disseminated masses of white or limpid calcareous spar. This rock is very uniform in character, and contains but few fossils. Reticulated corals, and fucoidal markings like the *Cauda-galli*, are most abundant.

In the quarry it is quite soft, but becomes very hard on exposure, and forms a very firm and durable building rock. It is also hydraulic and forms a good cement.

2. The upper division passes down into a fine, compact, blue or drab thin-bedded limestone, whose strata are quite irregular and broken. Its fracture is conchoidal, and its structure somewhat concretionary.

Some of the beds are filled with a great profusion of most beautiful fossils. In many the organic substance has been replaced by calcareous spar. The most characteristic are *Spirifer Marionensis, S. peculiaris, S. Cooperensis, S. Vernonensis, Productus Murchisonianus, Chonetes ornata, Atrypa gregaria, A. occidentalis, A. obscuraplicata, Leptæna depressa, Avicula Cooperensis, Mytilus elongatus*, and several new species of *Trilobites*.

Chouteau Limestone has been applied to these rocks, as they are well developed at the Chouteau Springs, in Cooper, where I first

found large quantities of its new, beautiful, and characteristic fossils.

In the northeastern part of the State, the Chouteau limestone is represented by a few feet of coarse, earthy, crystalline, calcareous rock, like the lower division of the encrinital limestone, as there developed. There is, indeed, in that part of the State, no change of lithological characters as you pass from the encrinital limestone to this formation, but the change in the organic remains is both sudden and great.

The Vermicular Sandstone and Shales.—The upper part of this formation is usually a buff, or yellowish-brown, fine-grained, pulverulent, argillo-calcareous sandstone. It is usually perforated in all directions with pores, filled with the same materials more highly colored and less indurated. This portion, when exposed to atmospheric agencies, often disintegrates, and leaves the rock full of winding passages, as if it were worm-eaten. In the southwest the harder part is much more silicious and indurated. The middle portion is a bluish-brown and gray silico-calcareous magnesian shale. It has a conchoidal fracture, the peculiar markings of the upper part, together with those of a curious undescribed *Fucoid.*

The lower part is usually a blue, sometimes brown, argillaceous shale or fire-clay, in regular thin strata.

This formation contains but few fossils, and those are in the upper portions. *Spirifer Marionensis, Productus Murchisonianus, Chonetes ornata, Avicula circula,* the Fucoids above named, and the *cauda-galli,* are most numerous. These beds can always be detected by the lithological characters and its peculiar *Fucoids.*

The Lithographic Limestone is a pure, fine, compact, even-textured silicious limestone, breaking rather easily, with a conchoidal fracture, into sharp angular fragments. Its color varies from a light drab to the lighter shades of buff and blue. It gives a sharp, ringing sound under the hammer, from which it is called "pot metal" in some parts of the State. It is regularly stratified in beds varying from two to sixteen inches in thickness, often presenting in mural bluffs all the regularity of masonry, as at Louisiana, on the Mississippi. The beds are intersected by numerous fractures, leaving surfaces covered with beautiful dendritic markings of oxide of iron. The strata are much thinner toward the top, where they often become silicious, and sometimes pass into an impure, thin-bedded oolitic limestone, as in the bluffs southeast of Elk Springs, in Pike County.

It has but few fossils. The most abundant are *Orthis Missouriensis, Spirifer Marionensis, Productus Subalatus, P. minutus,*

Prætus Missouriensis, Filicites gracilis, Conularia triplicata, Spirigera Hannibalensis.

The Chemung rocks extend from Marion County to Green, along the eastern border of the carboniferous strata.

The **Hamilton Group** is made up of some forty feet of blue shales and 130 feet of blue, brown, and gray semi-crystalline limestone, containing *Dalmania callitele*s, *Spirifer eurutines*, *S. mucronatus*, *S. aspera*, *S. congesta*, *Cyrtia Missouriensis*, *Spirigera Fultonensis.*

Onondaga Limestone.—This formation is usually a coarse gray or buff, crystalline, thick-bedded and cherty limestone, abounding in *Strophodonta navalis*, *S. Callawayensis*, *Terebratula reticularis*, *Orthis resupinata*, *Choncte*s *nana*, *Productus subaculeatus*, *Phacops bufo*, *Cyatho-phyllum rugosum*, *Emmonsia hemisphærica.*

No formation in Missouri presents such variable and widely-different lithological characters as the Onondaga. It is generally a coarse, gray, crystalline limestone; often a somewhat compact, bluish concretionary limestone, with shale partings; in many instances a drab, compact limestone, containing cavities filled with green matter, or calc-spar; in a few places a white, saccharoidal sandstone; in two or three localities a soft, brown sandstone; and at Louisiana, a pure white oolite. Will those who would have us follow lithological characters exclusively, tell us how we are to identify this formation, without its fossils, at these various localities?

The **Oriskany Sandstone** of Missouri is a light gray *limestone*, which contains the *Spirifer arenosa*, *Leptæna depressa*, and several new species of *Spirifer*, *Choncte*s, *Illænus*, and *Lichas.*

The Devonian rocks occupy a small area in Marion, Ralls, Pike, Callaway, Saline, and Perry Counties.

SYSTEM VI.—SILURIAN.

Of the **Upper Silurian** series, we have the following formations:—

Lower Helderberg—350 feet.
Niagara Group—75 feet.
Cape Girardeau Limestone—60 feet.

The **Lower Helderberg Group** is made up of buff, gray, and reddish cherty, and argillaceous limestones, blue shales, and dark graptolite slates. *Dalmania tridentifera*, *Cheirurus Missouriensis*, *Encrinurus punctatus* (?), *Calymene rugosa*, *Orthis hybrida*, *O. elegantula*, and several species of *Platyostoma* are the prevailing fossils.

Niagara Group.—The upper part of this formation consists of red, yellow, and ash-colored shales with compact limestones inter-

stratified. The lower beds are purple, gray, and buff limestones variegated with bands and nodules of chert.

Halysites catenularia, Columnaria inequalis, Calymene Blumenbachii, and *Caryocrinus ornatus* are the most characteristic fossils.

Cape Girardeau Limestone is a compact, bluish-gray, brittle, limestone, with a smooth fracture, in layers from two to six inches in thickness, with thin argillaceous partings. These strata contain a great many fossils, principally Trilobites and Crinoids. In a small slab not more than three by three inches, I have counted four genera of Trilobites, viz., *Cyphaspis Girardeauensis, Acidaspis Halli, Pratus depressus, Asaphus Nov. sp.* None of these Trilobites have been before noticed in this country, and, so far as I can ascertain, the species are distinct from European forms. According to Barrande, the first three genera occur in the greatest numbers in the Upper Silurian period, and are very sparingly represented in the Lower Silurian groups. The Crinoids belong mostly to the genera Glyptocrinus, Homocrinus, and Tentaculites and Palæster, and the shells to Orthis, Leptæna, and Turbo—all being of undescribed species.

These strata occur on the Mississippi River, about one mile and a half above Cape Girardeau. Thickness, forty to fifty feet.

Lower Silurian.

We have thus far observed the formations belonging to this series:—

Hudson River Group—220 feet.
Trenton Limestone—360 feet.
Black River and Bird's-eye Limestone—75 feet
1st Magnesian Limestone—200 feet.
Saccharoidal Sandstone—125 feet.
2d Magnesian Limestone—230 feet.
2d Sandstone—115 feet.
3d Magnesian Limestone—350 feet.
3d Sandstone—60 feet.
4th Magnesian Limestone—300 feet.

Hudson River Group.—There are three formations, which we have referred to this group:—

1st. Immediately below the oolite of the Onondaga limestone, in the bluffs both above and below Louisiana, we find some forty feet of blue, gray, and brown argillaceous magnesian limestone. The upper part of these shales is in thick beds, presenting a dull, conchoidal fracture, and containing *Asaphus megistos* and *Calymene senaria.* The

lower part of this division becomes more argillaceous, and has several thin beds of bluish-gray crystalline limestone, intercalated, which contain many fossils of the following species: *Leptæna sericea, L. alternata, L planumbona, Orthis jugosa, O. subquadrata,* and *Rhynchonella capax.*

There are, also, strata of calcareo-arenaceous slate in the same position, filled with remains, which I am unable to distinguish from Professor Hall's *Palæophycus virgatus,* and another contorted species, smaller than No. 2, pl. 70 of Professor Hall's Report. There are, also, beds of slate, similar to those above mentioned, at the base of these shales, whose surfaces are covered with great numbers of the *Lingula ancyloidea.*

2d. On the Grassy, three and a half miles northwest of Louisiana, about sixty feet of blue and purple shales are exposed, below the beds above described. They contain three species of *Lingula: Lingula quadrata, L. fragilis,* and still another not named. The first resembles the *L. quadrata* of Hall, but is destitute of the "radiating striæ" of that species, and is larger; it is more like the variety from the Trenton Limestone than that from the Hudson River Group.

3d. Under the second division are some twenty feet of argillo-magnesian limestone, similar to that in the first division, interstratified with blue shales. *Orthis subquadrata, O. jugosa, Leptæna alternata, Rhynchonella capax,* and *Asaphus megistos* are abundant.

These rocks have been seen only in Ralls, Cape Girardeau, and Pike Counties. On the Grassy, a thickness of 120 feet is exposed, and they extend below the surface to an unknown depth.

Trenton Limestone.—The upper part of this formation is made up of thick beds of hard, compact, bluish-gray and drab limestone, variegated with irregular cavities filled with greenish materials, while the beds below are filled with irregular cylindrical portions, which readily decompose on exposure, and leave the rock perforated with numerous irregular passages, that somewhat resemble those made in timber by the *Teredo navalis.*

The appearance of the rock when thus decomposed is very singular, and is a well-marked character of this part of the formation.

The decomposed, honey-combed portions are most admirably adapted to ornamental rock-work in gardens and yards. These beds are exposed on the plank-road from Hannibal to New London, north of Salt River, and are seventy-five feet thick. Below them are thick strata of impure, coarse, gray and buff crystalline magnesian limestones, with many brown, earthy portions, which rapidly disintegrate on exposure to atmospheric influences. This part may be seen in the bluff

of Salt River, near the plank-road, one hundred and fifty feet thick. The lower part is made up of hard, blue and bluish-gray, semi-compact, silico-magnesian limestone, interstratified with light buff and drab, soft and earthy magnesian beds. Fifty feet of these strata crop out at the quarries south of the plank-road bridge over Salt River, and on Spencer's Creek, in Ralls County.

The middle beds sometimes pass into a pure white crystalline marble of great beauty, as at Cape Girardeau.

Organic Remains.—Fossils are abundant in all parts of the formation. *Leptæna deltoidea, L. sericea, L. alternata, Orthis pectinella, O. testudinaria, O. tricenaria, Rhynchonella capax, Murchisonia gracilis, M. bellicincta, Receptaculites sulcata,* and *Chætetes lycoperdon* are most common.

Black River and Bird's-eye Limestone.—"They are bluish-gray or dove-colored, compact, brittle limestones, with a smooth, conchoidal fracture. The beds vary in thickness from a few inches to several feet." "Near the base the rock is frequently traversed in all directions by vermicular cavities and cells."

Gonioceras anceps, Ormoceras tenuifolium, and *Cythere sublevis* are the most abundant fossils.

1st Magnesian Limestone.—This formation is developed in many parts of the State. It is usually a gray or buff, crystalline, cherty, silico-magnesian limestone, filled with small irregular masses of a soft, white, or greenish-yellow silicious substance, which rapidly decomposes when exposed, and leaves the rock full of irregular cavities, and covered with rough projecting points. These rugged, weather-worn strata crop out in the prairies, and cap the picturesque bluffs of the Osage in Benton and the neighboring counties.

These beds often pass into a homogeneous buff or gray crystalline magnesian limestone, which is frequently clouded with blue or pink, and would make a good fire-rock and building stone.

At other places the strata become compact, hard, and clouded, as above, forming a still more beautiful and durable marble.

Some of the upper beds are silicious, presenting a porous, semi-transparent, vitreous mass, in which are disseminated numerous small, globular, white, enamelar, oolitic particles. They are sometimes in regular and continuous strata; at others in irregular masses, presenting mammillated, and batryoidal and drusy forms of this beautiful mineral. In some parts of Benton and the neighboring counties these masses, left by the denuded strata, literally cover the surface and render the soil almost valueless for ordinary cultivation.

Other strata abound in concretions, or organic forms, which resemble

wooden button-moulds, with a central aperture and one convex surface. Masses of calcareous spar are quite abundant in the upper beds. But the lower part of this formation is made up of thin, regular strata, of a soft, earthy, light drab or cream-colored silico-argillaceous magnesian limestone.

Above the beds already described we find, in several places in the State, a succession of hard, silicious, dark bluish-gray, semi-crystalline limestones, interstratified with grayish-drab, earthy magnesian varieties, all in regular layers destitute of chert. These strata have been joined to the first magnesian limestone, with the expectation that they may prove distinct from the calciferous sandrock and the first magnesian limestone, and be identified with the chazy limestone or some other formation.

Straparollus lævata (?), a small variety of *Cythere sublevis*, and a large *Orthoceras* have been observed.

Saccharoidal Sandstone.—This formation is usually a bed of white, friable sandstone, slightly tinged with red and brown, which is made up of globular concretions and angular fragments of limpid quartz. It presents very imperfect strata, but somewhat more distinct lines of deposition, variously inclined to the planes of stratification.

This interesting formation has a wide range over the State. I have seen it in Ralls, Boone, Saline, Cooper, Moniteau, Pettis, Benton, Morgan, Hickory, St. Clair, Cedar, Polk, and Dallas; and Drs. Shumard and Litton observed it in Perry, Franklin, St. Genevieve and other counties.

Its thickness is very variable, from one to one hundred and twenty-five feet. At times it thickens very rapidly; so much so, as to increase thirty or forty feet in a few hundred yards.

In a bluff about two miles northeast of Warsaw is a very striking illustration of this change of thickness. This sandstone crops out along the bluff, between the 1st and 2d magnesian limestone, and in a few yards decreases in thickness from twenty feet to one. Where thinnest, it is semi-vitreous, and the line of demarkation between it and the limestones is very distinct.

Near the same place is a locality where the sandstone thickens so rapidly as to present the appearance of a dike, cutting off the strata of limestone above and below that formation. I have had specimens broken from the junction of this dike-like mass with the wall of the adjacent limestone, which are half sandstone and half limestone, showing the two rocks firmly cemented together.

On Bear Creek, near Warsaw, as shown in the Second Annual Report of Missouri Survey, at Hermann, and in many other places, are

very striking instances of this dike-like development of this rock; but I must admit that such a freak among sedimentary rocks I have never observed in any other formation.

One might give a satisfactory reason for its penetrating the strata above, but by what process of nature it was made to cut off the beds below is not so obvious. There is, perhaps, a possibility that after the deposition of the 2d magnesian limestone, the waters which deposited the silicious matter of the sandstone first cut a channel in the upper strata of the limestone. But future investigations may enable us to solve the difficulty more satisfactorily.

A very large *Orthoceras* is found in this sandstone.

2d Magnesian Limestone.— The lithological characters of this formation are very much like those of the 1st magnesian limestone, above described.

The following section from the bluffs of the Osage, above Warsaw, will give an idea of its general character:—

No. 1. 12 feet.—First magnesian limestone.

No. 2. 4 feet.—Saccharoidal sandstone.

No. 3. 15 feet.—Soft, earthy, fine-grained, yellowish-white or drab silico-magnesian limestone, with a conchoidal, earthy fracture in beds from half of an inch to one foot thick, interstratified with thin layers of bluish silico-argillaceous magnesian limestone. It is called "*Cotton Rock.*"

No. 4. 1 foot.—Coarse-grained, crystalline, greenish-brown limestone, in thin laminæ. The crystals are as large as buck-shot, and give the rock a brecciated appearance.

No. 5. 8 feet.—Limestone, like No. 3, interstratified with chert.

No. 6. 10 feet.—Compact, buff silicious limestone, filled with heavy spar and iron pyrites, some parts so variegated with flesh-colored spots as to present the appearance of a breccia—a beautiful and durable marble.

No. 7. 3 feet.—Coarse, gray and brown, and buff crystalline magnesian limestone, filled with masses and veins of calcareous spar.

No. 8. 1 foot.—Like No. 3.

No. 9. 5 feet.—Like No. 7.

No. 10. 5 feet.—Hard, compact, gray silicious limestone, interstratified with chert and "cotton rock."

No. 11. 1 foot.—Yellowish-gray saccharoidal sandstone.

No. 12. 4 feet.—Like No. 10.

No. 13. 10 feet.—Like No. 3.

No. 14. 5 feet.—Semi-oolitic, sub-crystalline, hard, gray silicious limestone, interstratified with compact, flesh-colored silicious beds.

No. 15. 6 feet.—Soft, buff, fine-grained magnesian limestone, interstratified with chert and a compact, flesh-colored silicious limestone.

No. 16. 25 feet.—Coarse, gray and buff silico-magnesian limestone, variegated by cavities filled with a white or yellowish pulverulent silicious substance, which decomposes on exposure and leaves the rock porous. It is an excellent fire-rock.

No. 17. 4 feet.—Like No. 14.

No. 18. 10 feet.—Like No. 15. Strata undulating.

No. 19. 2 feet.—Fine, compact, flesh-colored silicious limestone.

No. 20. 8 feet.—Hard, gray, crystalline, semi-vitreous, calcareous sandstone, with chert interspersed.

No. 21. 20 feet.—Slope to water.

2d Sandstone.—This is usually a brown, or yellowish-brown, fine-grained sandstone, distinctly stratified in regular beds, varying from two to eighteen inches in thickness. The surfaces are often ripple marked and micaceous. It is sometimes quite friable, though generally sufficiently indurated for building purposes. The upper part is often made up of thin strata of light, soft and porous, semi-pulverulent sandy chert or horn-stone, whose cavities are usually lined with limpid crystals of quartz. Fragments of these strata are very abundant in the soil and on the ridges where this sandstone forms the surface rock. It sometimes becomes a pure, white, fine-grained, soft sandstone, as on Cedar Creek, in Washington County, in Franklin, and other localities.

3d Magnesian Limestone.—This limestone is exposed on the high and picturesque bluffs of the Niangua, in the neighborhood of Bryce's Spring, where the following strata were observed:—

No. 1. 50 feet.—2d sandstone.

No. 2. 80 feet.—Gray and buff crystalline silico-magnesian limestone, somewhat clouded with flesh-colored spots and bluish bands. It is regularly stratified in thick beds, some of which have many cells filled with a white, pulverulent, silicious substance; while others are ferruginous and semi-oolitic. It contains very little chert.

No. 3. 50 feet.—Blue and white ferruginous chert, interstratified with hard, compact, and flesh-colored silicious limestone.

No. 4. 190 feet.—Like No. 2, save some beds are hard, compact, buff or flesh-colored, and silicious.

No. 5 20 feet.—Light drab, fine-grained, crystalline silico-magnesian limestone, often slightly tinged with peach-blossom, and beautifully clouded with darker spots and bands of the same hue or flesh-color. It is distinctly stratified in beds of medium thickness.

No. 6. 50 feet.—Like No. 2.

No. 7. 30 feet—3d sandstone; crops out lower down.

3d Sandstone.—This is a white saccharoidal sandstone, made up of slightly-cohering, transparent, globular and angular particles of silex. It shows but little appearance of stratification, yet the well-marked lines of deposition, like those of a Missouri sand-bar, indicate its formation in moving water.

4th Magnesian Limestone.—This presents more permanent and uniform lithological characters than any of the magnesian limestones. It is usually a grayish-buff, coarse-grained, crystalline magnesian limestone, containing a few cavities filled with less indurated silicious matter. Its thick, uniform beds contain but little chert.

The best exposures of this formation are on the Niangua and Osage Rivers.

This *magnesian limestone series* is very interesting, both in its scientific and economical relations. It covers a large portion of Southern and Southeastern Missouri, is remarkable for its extensive caves and large springs, and contains all the vast deposits of *lead, zinc, copper, cobalt, hæmatite ores of iron*, and nearly all the marble beds of the State. They indeed contain a large part of all our mineral wealth.

The lower part of the 1st magnesian limestone, the saccharoidal sandstone, the 2d magnesian limestone, the 2d sandstone, and the upper part of the 3d magnesian limestone belong without doubt to the age of the calciferous sand-rock; but the remainder of the series may prove to be Potsdam sandstone.

Igneous Rocks.—There are a series of rounded knobs and hills in St. François, Iron, Dent, and the neighboring counties, which are principally made up of *granite, porphyry* and *greenstone*. These igneous rocks contain those wonderful beds of *specular iron*, of which *Iron Mountain* and *Pilot Knob* are samples.

These mountains of iron and igneous rocks are older than the oldest of the stratified rocks above described; as the beds of the latter rest against the sides of the former without exhibiting signs of any considerable disturbance.

THE MINERAL RESOURCES OF MISSOURI.

COAL.—Mineral coal has done much to promote the rapid progress of the present century; commerce and manufactures could not have reached their present unprecedented prosperity without its aid. And no people can expect success in those departments of human industry, unless their territory furnishes an abundance of this useful mineral. Previous to the present State Survey, it was known that coal existed in many counties of the State; but there was no definite knowledge of the continuation of workable beds over any considerable areas. But since the Geological Survey commenced, the southeastern outcrop of the Coal Measures has been traced from the mouth of the Des Moines, through Clark, Lewis, Shelby, Monroe, Audrain, Boone, Cooper, Pettis, Henry, St. Clair, Bates, and Vernon into the Indian territory; and every county on the northwest of this line is known to contain more or less coal, giving us an area of over 26,000 square miles of coal beds in that part of the State. The Geological Survey has proved the existence of vast quantities of coal in Johnston, Pettis, Lafayette, Cass, Cooper, Chariton, Howard, Boone, Saline, Putnam, Adair, Macon, Carroll, Callaway, Audrain; and it is confidently expected that the counties to the northwest will prove to be as rich when fully examined.

Outside of the coal field, as given above, the regular coal rocks also exist in Ralls, Montgomery, Callaway, St. Charles, and St. Louis; and local deposits of cannel and bituminous coal in Moniteau, Cole, Morgan, Saline, Cooper, Callaway, and probably other counties.

Workable beds of good coal exist in nearly all places where the Coal Measures are developed, as some of the best beds are near the base and must crop out on the borders of the coal-field. This is found to be the fact where examinations have been made. All of the little outliers along the borders contain more or less coal, though the strata are not more than ten or fifteen feet thick.

But exclusive of these outliers and local deposits, we have an area of 26,887 square miles of the regular Coal Measures. If the average thickness of workable coal be one foot only, it will give 26,887,000,000* tons for the whole area occupied by coal rocks.

* The mining engineers of England allow 1,000,000 tons per square mile for every foot of workable coal.

EXCAVATION OF ORE AT IRON MOUNTAIN.

But in many places the thickness of the workable beds is over fifteen feet; and the least estimate that can be made for the whole area is five feet. This will give 134,435,000,000 tons of good available coal in our State. In our efforts to estimate the economical value of so vast a deposit of this most useful mineral, we should constantly bear in mind the position of these beds, beneath the soil of one of the richest agricultural regions on the continent, within a State whose manufacturing and commercial facilities and resources are scarcely inferior to any, and adjacent to the Missouri River and the Pacific, the North Missouri and the Hannibal and St. Joseph Railroads. With all these advantages of location, the certainty that these coal beds can furnish 100,000,000 tons per annum for the next 1300 years, and then have enough left for a few succeeding generations, is a fact of no small importance to the State.

The local deposits of cannel and common bituminous varieties furnish some of the best coal in the State, and, though many of these beds will not yield sufficient quantities for exportation or extensive manufacturing purposes, they are of great value for supplying the local demand. But some of the beds of the cannel varieties could furnish a very large supply of an excellent article for gas, oil, and those manufacturing purposes, where a light pure coal, producing an abundance of flame, is desirable.

IRON.—Among minerals, iron stands pre-eminent in its influence upon the power and prosperity of a nation. Nations who possess it in large quantities, and by whom it is extensively manufactured, seem to partake of its hardy nature and sterling qualities. Missouri possesses an inexhaustible supply of the very best ores of this metal. She also has all desirable facilities for becoming the great iron mart of the Western continent.

Specular Oxide.—This is, probably, the most abundant and valuable ore in the State. Iron Mountain is the largest mass observed, and is made up almost exclusively of this ore in its purest form; as it contains no perceptible quantity of other mineral, save some less than one per cent. of silica, which improves rather than injures its quality.

But little need be said of this mountain of iron, as there is no room for speculation or doubt as to the quantity or quality—one is inexhaustible, and the other cannot be improved for many purposes. The quantity above the level of the valley is easily estimated. The height of the mountain is 228 feet, and its base covers an area of 500 acres, which gives, according to Dr. Litton, 1,655,280,000 cubic feet, or 230,187,375 tons of ore. But this is only a fraction of the

ore at this locality. The nature of the ore, the plutonic character of the associated rocks, and the position of the ore beneath the level of the valley, and of the sedimentary rocks skirting the base of the mountain, all indicate its igneous origin, and that it extends downward indefinitely, enlarging as it descends. But, on the supposition that it continues of the same size, every foot of descent will give over 3,000,000 tons of ore. Each one can judge for himself how deep he will be compelled to go to get *enough*.

Several veins of this ore, of good quality, are found intersecting the porphyry at the Shut-in, in township 33, range 4, north half section 2. The largest vein exposed is nearly vertical, ranging north and south, and is one foot thick. One of the first iron furnaces in this part of the country was erected at this place. There are other important localities of this ore in the neighborhood of Pilot Knob. The Bogy or Buford Ore Bed, in township 33, range 3 east, northeast quarter section 24; the Big Bogy Mountain, in township 33, range 3 east, southeast quarter section 13; and the Russell Mountain, in township 33, range 3 east, east half section 3, are the most noted.

Specular ore of the best quality abounds at a number of localities in Phelps County. The oldest known, and, perhaps, most valuable deposit in this county, is the Maramec Ore Banks, situated about a half mile from the Maramec, on the west side. This bank was opened as early as 1826, by Messrs. Massey and James, who commenced the erection of a furnace, which was completed in the month of January, 1829, and has been in operation at intervals up to the present time. The ore, which is a rich, compact specular variety, is wrought by Messrs. James, the present proprietors, with considerable profit. It occurs in large rounded or angular masses, and appears to be almost inexhaustible.

When the masses are broken they exhibit cavities filled with small, extremely beautiful, fibrous crystals of iron, which are highly iridescent, and sometimes perfectly transparent quartz crystals. In some parts of the bank the specular ore is imbedded in a soft, purplish hematite, which is quite soapy to the touch. It forms an excellent and valuable paint, for which purpose large quantities, I am told, are sent annually to the Eastern cities.

In section 32, township 37, range 8, there is an extensive deposit of specular ore very similar in character to the Maramec bank.

In *Dent County*, in sections 2, 3, 10, and 11, of township 35, range 4 west, is one of the most valuable and extensive deposits of the specular oxide of iron in that part of the State. The ore is rich and pure, and will yield a very large per cent. of the very best iron. In appear-

ance the ore is intermediate between that of the Iron Mountain and that at the Pilot Knob; but in quality it is not surpassed by either.

Iron ore is found at many localities in *Pulaski County*. A large deposit of specular iron ore similar to that used at the Maramec Iron Works in Phelps County, was examined in section 31, township 37, range 12.

These are but a few of the many localities of this ore known to exist in various parts of the State.

The Specular and Magnetic Oxides.—At Shepard Mountain the ore is usually a mixture of these varieties, (the magnetic being the least abundant,) in a very pure state; as they yield less than two per cent. of silex and alumina, which are the only substances perceptible in most of the ore; and they do not injure its quality. The ore at this mountain exists in vertical veins, ranging in different directions through the porphyry of which the mountain is composed. They vary in thickness from one foot to fourteen. Three of these veins have been partially explored. They will yield an enormous amount of ore, as they, doubtless, continue downward indefinitely; for they have every appearance of an igneous origin. They exist in nearly perpendicular fissures in a plutonic rock; the walls of these fissures appear to be striated in places; the purple porphyry on each side has lost its color and become very soft and somewhat friable, as might be expected from such a rock, after exposure to heat and the action of atmospheric influences; and besides, fragments of the porphyry were detected in the ore; and they changed in the same manner as the wall rocks. Such facts, it seems to me, indicate an igneous origin, and the indefinite continuation of the vein in a downward direction.

Silicious Specular Oxide.—The ore of the Pilot Knob is somewhat different from the other iron ore of this neighborhood, both in appearance and composition. It is more compact and breaks with a gray steel-like fracture, and contains ten or twenty per cent. of silica. The silica should make the ore no less valuable, as the presence of that mineral usually renders it more fusible and better adapted to some uses. Pilot Knob is 581 feet high, (its base 537 feet above St. Louis,) and it covers an area of 360 acres. A large portion of this mountain is pure ore; but it is not so easy to estimate the quantity, as it is interstratified with the slates, which, together with the ore, form the greater portion of the mountain. At any rate, the quantity is enormous, and may be considered inexhaustible. The amount above the surface cannot be less than 13,972,773 tons. But it evidently far exceeds this estimate; for the thick stratum from which the most of

the ore has been obtained will give nearly 10,000,000 tons. There are several strata above, and, at least, one below. Whether this ore had an igneous origin, is not so certain; still the metamorphosed character of the slates with which it is interstratified, the relative position of the plutonic rocks below and around it, and its similarity to the ores in Shepard Mountain, Iron Mountain, and the Shut-in, all go to show its igneous origin. If this be true, the main stratum is probably connected with the fissure through which it was ejected. This fissure or vein is to be sought on the southwestern side, where the dip of this stratum brings it near the base of the mountain or within its base.

There is no probability that this valuable ore can be exhausted within any time, sufficiently short, to affect the market value of the deposit.

There is ore enough of the very best quality within a few miles of Pilot Knob and Iron Mountain, above the surface of the valleys, to furnish 1,000,000 tons per annum of manufactured iron for the next two hundred years.

All of these ores are well adapted to the manufacture of pig-metal; and those of Iron Mountain and Shepard Mountain are used for making blooms by the Catalan process, in the Bloomeries, at Pilot Knob and at Vallé Forge.

Hematite.—This ore is very generally diffused through the southern part of the State wherever the ferruginous sandstone, or the 2d and 3d magnesian limestones are developed, as it is most abundant in those formations. The hematite of the ferruginous sandstone is not generally so uniform in texture and so pure as that found in the calciferous sandrock. There are three important localities of it in Cooper County. One is immediately on the bluffs of the Blackwater, in township 48, range 19 west, northeast quarter section 3. The ore at this place forms a stratum in the sandstone some three feet thick, which promises an abundant yield. The same ore again shows itself in the same geological position, in section 33 of the same township, where it covers a large area, and will furnish much more ore than the last locality. Loose masses were also seen in township 47, range 19, section 35, which had evidently fallen down from this sandstone in the hill above. The same ore was also observed on the eastern bluffs of the La Mine, above the mouth of Clear Creek. Large blocks of hematite were discovered resting on the surface of the encrinital limestone on the brow of a bluff in township 39, range 24, section 28, in St. Clair County. The ore at this place has been derived from the sandstone which had disinte-

grated and left the iron. In township 38, range 26, some half mile southeast of the Salt Creek Sulphur Springs, which are in section 27, I saw a great many large blocks of this ore from the same sandstone. There are also localities on Grand River, in Henry County.

One of the most valuable localities of iron was observed in the southwestern part of Greene County. Large masses of fibrous brown hematite cover several acres in the southeast quarter of section 24, township 27, range 24. The bed is more than eight feet thick in a shaft sunk into it. In the southwest quarter, section 19, township 27, range 23, we saw another large bed of the same ore. The same ore covers many acres in the northwest quarter of the same section. It also abounds in section 7 of the same township, and in sections 14 and 15, township 27, range 24. There are also large beds of this ore to the north and northeast of these localities. Some important beds of the common brown hematite occur at Pond Springs, and several other localities in Greene County. In section 2, township 25, range 25, in Stone County, large quantities of the ore were observed. Beds of less importance were also seen in nearly all the counties examined in the southern part of the State.

The hematite of the magnesian limestones is of better quality and more extensively diffused. The most important localities in the 2d magnesian limestone are in Franklin County, in townships 41 and 42, range 1 east. These beds will yield a large amount of excellent ore. There is also a quantity of this ore a short distance above Warsaw and several localities west of Buffalo. Many localities of it were observed in the 3d magnesian limestone. But the most important is in the ridge, in the forks of the Big and Little Niangua, extending from the mouth of the latter to section 12, township 38, range 18. The slopes of this ridge and the ravines skirting it are covered with fragments of the ore in such quantities as seem to indicate a vast deposit. The hematite in township 34, range 3, section 21, is probably in this limestone. The ore is good; but I cannot speak with certainty of the amount.

The 4th magnesian limestone also contains several important deposits of this ore in Camden.

In the northwest quarter of section 27, township 36, range 7, large masses of *specular* and *brown* iron ore abound on the surface. A shaft of fifteen feet has been sunk here, from which a good deal of argillaceous red hematite has been taken.

In Perry County several fine deposits of hematite ore have been discovered. The *Birmingham beds* are, perhaps, the most important. These beds are located near the mouth of Apple Creek, in

what are called Iron Ridge and Iron Hill. The ore is abundant and good.

In Stoddard County, near Kitchen's Mill, I discovered large quantities of this ore. It was used in building the dam for the mill. In township 27, range 9, the bluffs toward Duck Creek Swamp contain vast beds of good hematite. I followed the outcrop several miles along the bluffs. But the most extensive of the deposits of this ore was discovered in the bluffs facing Mingo Swamp, in township 27, ranges 8 and 9. Here it appears as a regular stratum in the magnesian limestones. It is four or five feet thick, and extends along the bluff nearly a mile.

In Scott County I discovered several beds of this ore in the tertiary rocks in the bluffs facing the southern swamps. The beds are extensive; but the quality is inferior.

Bog Ore is very abundant in the swamps of Southeast Missouri. I examined vast beds of this in Scott County, in section 2, township 27, range 14, on the *Stake Glades*, where the ore is nearly one foot thick over a large area. From this point the ore was seen at short intervals in St. John's Lake or swamp down to the Iron Ore Ford, where the quantity is very great—the bed about one foot thick. This ore also exists in Big Cypress west of Sandy Prairie. It was also discovered in extensive beds in the swamp southwest of Charleston, Mississippi County. In Dunklin County, in Buffalo and Honey Cypresses, fine beds were discovered several miles in length. The quantity of this ore in this part of the State is very great—more than enough to supply all future demands.

Spathic Ore or **Carbonate of Iron.**—This ore is found in greater or less quantities in all parts of the State where the coal measures exist; but the most valuable beds yet examined are those in the tertiary rocks in the bluff of the southern and eastern parts of township 28, range 13, and township 29, range 14. There are four regular strata of the ore, varying from one to two feet in thickness. These beds crop out of the southern face of the bluffs at various points between Benton and Commerce. The ore is good, and may be worked to great advantage.

LEAD.—Next to iron, lead is perhaps the most abundant of all the valuable metals in the State. Our lead mines have been worked with great success for the last half century. It is true that the amount of mining done and the success at various points have been somewhat variable, as is always the case in mining operations, when conducted and carried on by men who have but little capital and practical knowledge of the work; as ours have been in some considerable de-

gree at least. Many of our mines have been neglected for various reasons. Some on account of disputed titles, others from the general depression of the business affairs of the West; but there is no good reason to suppose our mines would be less productive now than at any previous period. Few or none have been exhausted; and many are now worked with greater success than at any previous time. All the facts encourage a more extended effort to work out and more fully develop some of the neglected lead mines of our State.

Our space will not permit a detailed account of the lead mines of the State. There are more than *five hundred* localities, old and new, that promise good returns to the miner; two hundred and sixteen have been catalogued in my report on the southwest branch of the Pacific Railroad.

The **Eastern Lead Region** comprises a large portion of Franklin, Washington, Jefferson, Crawford, Phelps, Dent, Madison, St. François, St. Genevieve, and some parts of the adjoining counties, giving an area of some 5000 square miles.

The **Southwestern Lead Region** comprises a large portion of Newton and Jasper, and portions of the adjoining counties, making an area of about 200 square miles.

The **Osage Lead Region** contains a considerable portion of Cole, Moniteau, Morgan, Benton, Camden, and Miller Counties, an area of about 1000 square miles.

The **Southern Lead Region** comprises portions of Taney, Christian, and perhaps other counties. The extent is but little known; at least 100 square miles have been examined.

It is not to be supposed that these areas, large as they are, contain all the lead lands of the State. We have not yet examined a single county south of the Osage and the Missouri without finding in it more or less of this valuable mineral. And, besides, nearly all the counties in Southern Missouri are underlaid by the true lead-bearing rocks of our State.

We have then 6300 square miles in which lead deposits in workable quantities have been found and successfully worked; and at least 15,000 square miles more of lead-bearing rocks, where we may reasonably expect to find valuable deposits of this mineral. I must refer to the Geological Reports for the details of our lead mines.

COPPER.—The copper mines of Shannon, Madison, and Franklin Counties have been known for a long time. Some of the mines of Shannon and Franklin were once worked with bright prospects of success. Some in Madison are still yielding with good results.

Deposits of copper have been discovered in Dent, Crawford, Benton,

Maries, Greene, Lawrence, Dade, Taney, Dallas, Phelps, and Wright Counties. But the mines in Franklin, Shannon, Madison, Dent, and Washington give greater promise of yielding profitable results than any others yet discovered. When capitalists are prepared to work these mines in a systematic manner, they may expect good returns for the money invested.

ZINC.—Sulphuret of zinc is very abundant in nearly all the mines in Southwestern Missouri, particularly in those mines in Newton and Jasper, in the mountain limestone. The carbonate and the silicate occur in the same localities, though in much smaller quantities. The ores of zinc are also found in greater or less abundance in all the counties on the southwestern branch; but the distance from market, and the difficulties in smelting the most abundant of these ores, the sulphuret, have prevented the miners from appreciating its real value.

It often occurs in such large masses as to impede very materially the progress of mining operations. For this reason, *black-jack* is no favorite with the miners of the Southwest. Many thousand tons have been cast aside with the rubbish as so much worthless matter; but the completion of the Southwestern Branch will so lessen the cost of transportation as to give a market value to this ore, and convert into valuable merchandise the vast quantities of it, which could be so easily obtained in Jasper, Newton, and other counties of the Southwest.

Considerable quantities of the sulphuret, carbonate, and silicate, also occur in the Eastern Lead Region. At Perry's mine, at Mount Hope mine, in township 36, range 3, east, sections 4 and 7, and at a locality near Potosi, these ores exist in some considerable quantities; but little has been done to test the value of the ores of zinc in these and other localities in the State.

COBALT AND NICKEL.—Ores of these metals are obtained in some considerable quantities in Mine La Motte. Small quantities only have been discovered in other localities.

MANGANESE.—The peroxide of manganese exists in small quantities in the second sandstone, on the plank-road, west of St. Genevieve, and at Buford's ore bank.

SILVER.—Silver has not been discovered in the State, save in minute quantities in the sulphuret of lead.

GOLD.—Gold has been found in very small quantities in a few places in the State; but I have no evidence that any of the localities will pay for working them.

PLATINUM.—Platinum has been reported in one or two localities in the State; but I have not been able to obtain any.

BUILDING MATERIALS.—The possession of materials for the construction of habitations is one of the first necessities of the human race; and, as the race advances in civilization and wealth, the demand for the more beautiful and durable qualities constantly increases, and it becomes a matter of no small importance to determine whether we are prepared to supply the demand which our advancement will create for dwellings, warehouses, and public edifices. Our examinations in Missouri prove the existence of such materials in nearly every formation in the State.

Limestones, suitable for building purposes, are abundant in the Upper and Middle Coal Series, in the St. Louis Limestone, the Archimedes Limestone, the Encrinital Limestone, the Chouteau Limestone, the Onondaga Limestone, the Cape Girardeau Limestone, the Trenton Limestone, and the second, third, and fourth Magnesian Limestones. All of these formations are, more or less, employed in the places where they are exposed. Numbers 1 and 6 of the Upper Coal Series furnished the rock used in the Presbyterian church and the public-house, erected by Mr. Park, at Parkville, and in the public buildings at Fort Leavenworth, all of which indicate their durability and beauty; and the ease with which it is wrought into any desirable form renders it a very economical building material. No. 41, of the Middle Coal Series, is a light-gray semi-crystalline limestone, which is both durable and beautiful. It is used at Lexington.

The St. Louis limestone has many beds of excellent rock, which are extensively quarried and employed for various purposes in St. Louis County. The Archimedes beds furnish a very great number of very durable limestone. It is used for the custom-house in St. Louis. The Encrinital strata are more extensively employed for economical purposes than any other limestone in the State. The State University and the Court-house, at Columbia, furnish abundant proof of its adaptation to building purposes. The upper beds of the Trenton limestone, and the dark compact and the light magnesian strata in the lower part, are very desirable building stones; but the middle beds are not so durable; still they are sometimes used. The court-house, in St. Louis, presents good examples of the Trenton limestone.

The strata of Cotton-Rock, so abundant in the magnesian limestones, are much used. The State-house, Court-house, and many other buildings at Jefferson City, show the adaptation of this limestone to such purposes. This is the same as the buff limestone imported into St. Louis from Illinois for houses. This rock is equally good at many localities in our own State. These formations, also, contain numerous beds of the silicious and the magnesian crystalline

varieties, which are much stronger and more durable than the Cotton-Rock.

Marbles.—There are several beds of excellent marble in the State. The 4th division of the encrinital limestone is a white, coarse-grained, crystalline marble, of great durability. It crops out in several places in Marion County. One of the best localities is in the bluffs of the Mississippi, between McFarlin's Branch and the Fabius. The lithographic limestone would furnish a hard, fine-grained, bluish-drab marble, that would contrast finely with white varieties in tesselated pavements for halls and courts.

The Cooper marble of the Onondaga limestone has numerous pellucid crystals of calcareous spar disseminated through a drab, or bluish-drab, fine, compact base. It exists in great quantities on the La Mine, in Cooper, and on See's Creek, and in other places in Marion; and it is admirably adapted to many ornamental uses.

McPherson's marble, a bed of the Trenton limestone, situated in the vicinity of Rattlesnake Creek, is a hard, light-colored, compact limestone, intersected with numerous thin veins of transparent, calcareous spar, which give it a beautifully variegated surface when well polished. It appears to be strong and durable. McPherson's marble block, on Fourth Street, St. Louis, is constructed of it.

Cape Girardeau marble is also a part of the Trenton limestone located near Cape Girardeau. It is nearly white, strong, and durable.

There are several beds of very excellent marble in the magnesian limestone series. In sections 34 and 35 of township 34, range 3 east, are several beds of semi-crystalline, light-colored marbles, beautifully clouded with buff and flesh color. They receive a fine polish, are durable, and well fitted for many varieties of ornamental work and building purposes. But one of the most desirable of Missouri marbles is in the 3d magnesian limestone, on the Niangua. It is a fine-grained, crystalline, silico-magnesian limestone of a light drab, slightly tinged with peach-blossom, and beautifully clouded with the same hue or flesh color. It is twenty feet thick. This marble is rarely surpassed in the qualities which fit it for ornamental architecture. The beautiful Ozark marbles are well known. Some of them have been used in ornamenting the Capitol at Washington. The localities are very numerous throughout the Ozark region.

There are also several other beds in this and the other magnesian limestones which are excellent marbles. Some are plain, while others are so clouded as to present the appearance of breccias.

Granite.—Granite Knob will furnish any amount of a superior coarse granite, admirably adapted to all structures where durability and

strength are desirable. Its introduction to general use in St. Louis would add much to the architectural effects produced by her public and private edifices.

Brick.—The pipe-clay and sands of the drift will furnish a large amount of the very best materials suitable for manufacturing the most durable and beautiful brick. The argillaceous portions of the bluff make a very good article. It is generally diffused, and is almost universally employed for that purpose. Nearly every township in the State has an abundance of these clays.

Fire-bricks are manufactured from the fire-clays of the lower coal series in St. Louis County. These bricks have the reputation of possessing fine refractory properties. There are many beds of fire-clay in the coal measures; and besides, some beds of the Hudson River group, in Ralls and Pike Counties; of the Hamilton group, in Pike and Marion; and of the vermicular sandstone and shales on North River, seem to possess all the qualities of the very best fire-clays. The quantity of these clays is great, almost beyond computation. No possible demand could exhaust them.

Fire-rock has often been observed. Some of the more silicious beds of the coal measures are very refractory, as many have discovered. The upper strata of the ferruginous sandstone, some arenaceous beds of the encrinital limestone, the upper part of the Choutean limestone, and the fine-grained, impure beds of the magnesian limestones, all possess qualities which will enable them to withstand the action of fire. But the 2d and 3d sandstones are the most refractory rocks yet examined, and are well adapted to use where great strength and firmness are not demanded. They are used in the furnaces at Iron Mountain and Pilot Knob.

Paints.—There are several beds of purple shales in the coal measures which seem to possess the properties requisite for paints used in outside work. Nos. 10, 31, and 50 of this formation have shales of a bright-purple color and firm texture. But No. 10 possesses the best qualities. It has a more uniform texture and color, and is much more abundant than either of the others. This bed is exposed in the bluff opposite to Bethlehem; at Fort Kearney, in a bluff ten miles below that station, opposite Sonora; at the mouth of the Little Nemaha; and at Dallas, Weston, and Parkville. Mr. Park, of the last place, has used it with oil, both alone and mixed with white-lead, for outside work; and several years' exposure have proved it very durable. Its color is more brilliant when prepared with oil; but when mixed with white-lead it produces a dark, dull, peach-blossom color, which is very agreeable and appropriate for some purposes. Its properties as

a fire-proof paint were also tested by Mr. Park. An inch board was covered with a thick coat, when coals were burned upon the painted side until the whole thickness of the board was charred; but the paint remained firm and uncracked. He has also compared it in use with the famous Ohio paint, and thinks ours the best. At several of the above localities thousands of tons could be thrown from the beds into a boat lying in the river beneath.

Cements.—All of the limestone formations in the State, from the coal measures to the 4th magnesian, have more or less strata of very nearly pure carbonate of lime, which will consequently make good quick-lime. But few if any of the States have such an abundance, and so general a distribution of this important article of domestic use.

All the limestones whose physical characters indicated hydraulic properties have been collected, and some of them subjected to analysis. So far as can be judged from the results obtained, we have many beds of hydraulic limestone. Several beds of the coal measures are hydraulic.*

Vermicular Sandstone and Shales.—The middle beds are hydraulic, as indicated by the analysis.

Lithographic Limestone.—The upper beds come in this class.

Cape Girardeau Limestone.—The analysis and description show good hydraulic properties.

Magnesian Limestones.—Several beds in these formations are hydraulic.

Chouteau Limestone.—The upper division of this formation, as it is developed in Boone, Cooper, and Moniteau Counties, gives the best indications of excellent hydraulic properties. The beds are about thirty feet thick, and have a uniform texture and composition. These very much resemble the hydraulic strata at Louisville, and can furnish any desirable quantity.

Vermicular Sandstone and Shales.—The middle beds of this formation, both in Marion and Cooper, have superior hydraulic properties. This is especially indicated by the dark-clouded beds which were passed through in sinking the well of Mr. Winston Walker, in Cooper.

Hudson River Group.—The upper and lower beds of this formation give good evidence of being hydraulic.

From present indications, the hydraulic limestones of our State may be expected to supply the home demand and furnish large quantities for exportation.

ROAD MATERIALS.—In a country where the superficial deposits

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* See Second Annual Report, page 168.

make such bad roads it is a matter of no small importance to have an abundance of good materials for highways. The limestones, so abundant in the country, are much used for macadamized roads. But the rapid pulverization of limerock, and the consequent mud and dust, particularly in towns and cities, render it very desirable to point out a more durable and economical substitute. The coarse gravels of the boulder formation and of the river beds furnish an abundance of the best possible substitute. These deposits contain gravels of any degree of fineness, from the sand suited to the formation of footpaths to the pebbles best adapted for carriage-ways. Any amount, of any given coarseness, may be obtained by screening, in all parts of the country, either from the drift or the river-beds. These pebbles have the advantage of limestones in several particulars:—

1st. They are more durable, being fragments of chert and the harder igneous and crystalline rocks, which have withstood the action of those unknown but all-powerful causes which have worn away and ground to dust so large a portion of our superficial rocks, and transported to our territory such quantities of the rocks *in situ*, several hundred miles to the north. Those from the river-beds, also, have been exposed to aqueous action for unknown ages.

2d. They are less injurious to animals and carriages, as all the pebbles are water-worn and rounded.

3d. By their use we should avoid the impalpable dust of the limestone, so injurious to health and property in our cities. We should, also, escape much of the mud, which is scarcely less objectionable.

Should St. Louis but pave a single street with these pebbles, every person living or doing business upon it would at once see the difference in comfort and health. The impalpable dust of the dry weather and the *liquid* mud of the wet, would no longer soil the furniture and goods of the houses and shops, and clog the lungs and disfigure the garments of those passing over it. Material could be obtained from various parts of the State. Good pebbles are abundant in the streams of Marion, Boone, Cooper, and Monitcau. The Osage and its tributaries can supply any needed quantity, and there can be no doubt that the Gasconade and the Maramec have a good supply of them in localities nearer St. Louis. Small steamers could easily reach bars made up of good pebbles, on the Osage, the La Mine, and other streams, and obtain a supply sufficient to meet all demands.

Lithographic Limestone.—This is a very fine, compact, even-textured rock, which resembles the best lithographic stones so closely that hand-specimens of them can scarcely be distinguished.

Messrs. Schaerff & Brother, of St. Louis, have tested this rock,

and pronounced some parts of it good. Excellent slabs large enough for small engravings can be obtained with ease; but the jointed structure of the strata, and an occasional particle of iron pyrites, will make it difficult to get large slabs of suitable quality.

SPRINGS.—We have a great abundance of Springs, both fresh and mineral. The fresh springs are very numerous in all parts examined, and some of them are very large.

Bryce's Spring, on the Niangua, is the largest observed. The quantity discharged was carefully measured, and it was ascertained that 455,328 cubic feet of water were discharged per hour, and 10,927,872 cubic feet per diem. The Gunter and Sweet Springs are not quite so large; and, what increases their value, the quantity and temperature of the water scarcely changes during the year. We have several varieties of mineral springs—chalybeate, sulphur, and brine. The most important chalybeate spring observed is in or beneath the ferruginous sandstone, west of Osceola. Salt springs are very generally diffused. The sulphur springs are also very abundant; and a few have acquired some considerable reputation for their sanitary qualities. Those most popular are the Chonteau Springs, in Cooper; the Elk Springs, in Pike; and the Monagan Springs, in St. Clair. We have seen sulphur springs in Marion, Pike, Howard, Cooper, Saline, Benton, St. Clair, and St. Louis Counties.

Petroleum Springs.—I am indebted to the Hon. Charles Sims for a bottle of petroleum, from what is commonly called *Tar Spring*, situated about five miles west of Coldwater Grove, which is near the middle of the western boundary of Cass County. The petroleum usually rises with the water, and forms a stratum on its surface; but, in drought, when the spring does not discharge water, it comes up in a pure state and fills the basin.

AGRICULTURAL RESOURCES OF MISSOURI.

In determining the value of a country, whether it be to secure national greatness or individual wealth and happiness, the character of the soil is of the first importance, as the largest portion of the wealth of individuals and the power of nations depend primarily upon the products of the earth; and, indeed, without a good soil, no nation can hope to enjoy any permanent prosperity and greatness.

It is doubtless true that the soil of Missouri surpasses that of any other equal portion of our continent in fertility and variety, and in adaptation to the varied wants of an enlightened people. While our soils and climate are surpassed by none for the production of corn, wheat, oats, grasses, hemp, and tobacco, nearly all the staple products of Europe and North America would do well in some parts of the State. In the northern part, the potato, the grasses, and cereals of the cooler northern States are most luxuriant; and in the southern portion we see the cane and cotton of the Sunny South; and in the central highlands, the cereals, grapes, and other fruits of Central and Southern Europe are yielding their rich harvests and delicious fruits as kindly as upon their chosen hills in Normandy and Italy.

There are many varieties of Soil in the State. Some of them deserve a more detailed description.

1. **Alluvial Soil.**—This variety occupies the *bottom lands* of all our large streams. It is based upon the beds of sand, clay, and humus of the alluvial formation, above described, and is one of the most desirable and productive of all in the State. Its physical properties are such, it is so light and porous and deep, that in wet weather the superabundance of water readily passes off; while, in drought, the roots sink deep, and the water below easily ascends by capillary attraction and keeps the surface moist. These scientific deductions are abundantly sustained by the experience of those who have cultivated farms on it for the past twenty or thirty years. When the crops on the neighboring farms have been parched by drought or drowned by excessive rains, those of the *bottom* farms have never failed from these causes.

The great fertility of this soil is very clearly shown by the tropical luxuriance of the natural vegetation. The timber is abundant and as large as any in the Mississippi valley. The most abundant trees are cottonwood; sycamore; white and sugar maple; box-elder; slippery

and American elm; red birch; black, white, and blue ash; coffee-tree; wild-cherry; catalpa; cypress; sweet gum; tupelo; buckeye; honey locust; bur, white, swamp-white, rock chestnut, yellow, laurel, pin, red, and scarlet oaks; shellbark, thick shellbark, and pignut hickories; hackberry; papaw; red bud; black and white walnuts; linden; wild-plum; several willows; pecan; mulberry and red birch. The trumpet and Virginia creepers, the poison ivy, and several species of grapes almost cover with their graceful foliage many of the largest trees.

The soil of the *bottom prairies* has nearly the same properties, and may be classed in the same variety.

The soil occupies an area on the borders of the Mississippi, the Missouri, and our other large rivers of about 5,000,000 acres. The farms opened are usually cultivated in corn, wheat, hemp, and tobacco. The yield, even with our poor cultivation, is of corn, 15 to 20 barrels; wheat, 20 to 25 bushels; hemp, 10 to 12 hundred; and tobacco, 1500 to 2000 pounds per acre.

2. **Bluff or Hemp Soil.**—The bluff formation, where well developed, produces a light, deep calcareo-silicious soil, of the very best quality. The alumina, silex, and lime are mingled in such proportions with the other fertilizing properties in this formation as to adapt it, in an admirable degree, to the formation of soils and subsoils; and, as might be expected, the soils formed upon it, under favorable circumstances, are equal to any in the country. The territory occupied by this soil is known as *Hemp Land;* it is most popular among Western farmers: and yet its great value is not fully appreciated. It is light and rich, and will improve rather than deteriorate with judicious culture. The marl beds, upon which it everywhere rests, will be the inexhaustible source of its fertility for all future time.

This soil covers a greater or less portion of all the western counties of the State, from Cass to Atchison, and eastward to Howard. It is also found in some considerable areas in other portions of the State; as in Marion and St. Louis Counties. It covers an area of some 8,000,000 acres. Hemp, corn, and tobacco are the staple crops. The surface of the country is high rolling prairie and timber, well watered and well drained.

The timber most abundant is hackberry; elm; wild-cherry; honey locust; common and pignut hickories; coffee-tree; bur, swamp-white and chestnut oaks; black and white walnut; mulberry; papaw; linden; and grapes.

3. The bluff formation, where not fully developed, becomes more argillaceous and forms a soil somewhat inferior. On account of the

impervious nature of the clayey subsoil, it suffers more by drought and excess of rain. This is called *Hickory Land* in some parts of the State; in others, *Mulatto Soil.*

When timbered, the growth is usually shellbark and common hickories; white, black, and scarlet oaks; black walnut; sugar-tree; white and blue ash; papaw; red and black haws; red bud; linden; and grapes. The country is high and rolling; and is about equally divided between prairie and timber.

The crops most cultivated are corn, wheat, oats, rye, tobacco, and the grasses. Of the grasses, blue-grass, timothy, clover, and Hungarian grass are most in favor.

This soil prevails in the northern, central, and southern portions of the State over an area of some 10,000,000 acres. This is esteemed by many the best wheat-land in the State.

4. Other portions of the State, underlaid by the bluff formation, are occupied by a soil somewhat inferior to the last. These portions are known as *White-Oak Lands;* and they usually abound on high ridges and steep slopes, where the rains of past centuries have washed away the finer and richer materials of the surface soil.

The timber on the *White-Oak Lands* is usually white, post, black, gray, and black-jack oaks; and black hickory, dwarf sumach, and shellbark hickory often grow on the better portions.

This soil was formerly more popular than at present. It produces wheat, rye, oats, corn, tobacco, and the grasses. Analyses show the subsoil much better than the surface; and deep cultivation has much improved the crops on this variety of soil. It covers an area of some 5,000,000 acres in the State.

5. There is in the southern counties a reddish, marly clay, probably of the same age as the bluff, which is the foundation of a very productive and durable chocolate-colored soil. This soil, when not affected by the subjacent rocks, is very good, and sustains a fine growth of American, slippery, and Wahoo elms, honey locust; black cherry; mulberry; black gum; hackberry; white, red, black, bur, chestnut, rock chestnut, and laurel oaks; common and shellbark hickories; crab-apple; black and red haws; papaw; white and blue ashes; black walnut. This variety of soil abounds in many of the southern counties. It is well represented in the neighborhood of Farmington, St. François County, in the beautiful valley of Arcadia, south of Pilot Knob, in the Kickapoo and other rich prairies of Southwestern Missouri, and in the rich valleys and slopes of the whole Ozark range or highlands of Southern Missouri, where it probably covers 1,000,000 acres in all.

This soil is very productive and durable. It yields fine crops of corn, wheat, oats, tobacco, and even hemp. Cotton is sometimes grown upon it.

6. The red marl or clay beds upon which this soil rests are often so thin that the lime, magnesia, sand, and flints of the subjacent magnesian limestones and sandstones mingle with and greatly modify this fifth variety of soil. When the flints are not too abundant, this soil is very productive. The ingredients above named render it very light, dry, and still tenacious of moisture. It yields all our staple crops but hemp, and is the best possible soil for fruit culture. Apples, grapes, peaches, pears, quinces, plums, cherries, blackberries, strawberries, raspberries, and many other varieties of fruit are produced with great success on this soil.

This variety may occupy some 4,000,000 acres, principally in the highlands of Southern Missouri.

7. But where this soil is thin, and filled with the chert and sand of the subjacent limestones and sandstones, it becomes very poor, and sustains a scattered growth of black, white, post, and black-jack oaks; black hickory; sumachs and hazels. Only a stunted growth of post oak, black-jack, black hickory, dwarf sumachs, and American hazel, is found on the poorest ridges. These cherty hills and ridges are prevalent in all the southern counties, except those on the western, eastern, and southeastern borders of the State.

This soil is not used for ordinary cultivation. It is reserved for pasture and timber. The better portions may be made the most profitable of all our soils for the cultivation of the grape and other fruits.

It covers an area of some 6,000,000 acres in Southern Missouri.

8. In some of the southern counties the sandstones of the magnesian limestone series have rendered the soil very sandy and light, and almost useless for the ordinary farming purposes. This soil produces the yellow pine, and is known as the *Pine Lands* or *Pineries* of Southern Missouri. The area occupied is not determined—it may be 2,000,000 acres.

Such is a very brief description of the most important varieties of soil in Missouri. With 41,000,000 acres of such soils in a climate warm and salubrious, we have a foundation for wealth and prosperity such as few States or countries can boast. With proper cultivation it will be a source of unbounded wealth to this and many future generations.

A few figures will give us some idea of what our State is capable

of producing from its soil alone. With only one-half of the State in cultivation it would easily yield

From 8,000,000 acres of corn, at 10 barrels per acre.....400,000,000 bushels.
" 3,000,000 acres of wheat, at 10 bushels per acre..... 30,000,000 "
" 1,000,000 acres of oats, at 20 bushels per acre..... 20,000,000 "
" 2,000,000 acres of hay, at 2 tons per acre..... 4,000,000 tons.
" 1,000,000 acres of hemp, at 8 hundred per acre..... 8,000,000 hundreds.
" 1,000,000 acres of tobacco, at 10 hundred per acre. 10,000,000 "
" 3,000,000 acres of grapes, at 200 gallons per acre...600,000,000 gallons.
" 1,000,000 acres in other fruit would yield enough to supply all the demands of a dense population.

Such are the crops our rich domain might easily yield to reward the labors of the farmer, and feed the millions who will ere long be working out and manufacturing our vast mineral resources. And yet these figures are below, far below the results obtained by our good farmers.

TIMBER AND TREES OF MISSOURI.

The broad, rich bottoms of all the streams in the State sustain a very heavy growth of most excellent timber of nearly all the most useful varieties—cottonwood; bur, red, laurel, pine, and swamp white oaks; black and white walnuts; white, blue, and black ashes; white red, and Wahoo elms; red birch; honey locust; buck-eye; box-elder; black cherry; hackberry; pignut, and common and thick shellbark hickories; red bud; sugar and white maples; mulberry; American plum; hazel; papaw; sycamore; Muscadine, summer, and fox grapes; and several species of thorn and willow are most abundant.

In the southeastern counties we also have an abundance of cypress, tupelo, yellow gum, catalpa, overcup and Spanish oaks, strawberry-tree, cross vine, water locust, spice bush, and cane.

A large portion of the upland of the central, northern, eastern, and western parts of the State has a very heavy growth of white, black, bur, post, black-jack, chestnut, laurel, scarlet, and swamp white oaks; white and black walnuts; sugar-tree; mulberry; honey locust; common shellbark, thick shellbark, and pignut hickories; pecan; linden; American and slippery elms; cherry; coffee-tree; hackberry; white and blue ashes; red bud; dogwood; papaw; red cedar; haws, and grapes. In the south we also have the beech, tulip-tree, (erroneously called "*poplar*,") sweet gum, holly, yellow pine, and Wahoo elm.

But other portions of the north, and a large part of the south, are sparsely timbered with small black-jacks, post oaks, and black hickories, forming beautiful *oak-openings*. This stunted growth is not, however, due to the poverty of the soil, but to the fires which have annually overrun this country since the earliest dates of the Indian traditions. These fires, fed by the rank annual growth of grasses and other herbaceous plants, have entirely destroyed some of the young trees, while they have scorched and very much retarded the growth of those sufficiently vigorous to withstand their ravages.

Large areas, particularly those underlaid by sandstones, are covered by very extensive and valuable forests of the yellow pine. These pine forests are very extensive in many of the southern counties, and annually yield a large supply of most excellent lumber.

The growth is very large on the rich soils of the State, as the following measurements of trees show:—

In Howard County, a white oak measured 28 feet in circumference.

In Howard County, a grape vine measured 3 feet in circumference.

In Stoddard County, a beech, *Fagus ferruginea*, 18 feet in circumference, and 100 feet high.

In Dunklin County, a catalpa, *Catalpa bignonioides*, 10 feet in circumference, and 90 feet high.

In Stoddard County, a tupelo, *Nyssa grandidentata*, 30 feet in circumference, and 120 feet high.

In Pemiscot County, an elm, *Ulmus Americana*, 22 feet in circumference, and 100 feet high.

In Pemiscot County, a cypress, *Taxodium distichum*, 29 feet in circumference, and 125 feet high.

In Cape Girardeau County, a sweet gum, *Liquidambar styraciflua*, 15 feet in circumference, and 130 feet high.

In Cape Girardeau County, a white ash, *Fraxinus Americana*, 18 feet in circumference, and 110 feet high.

In Mississippi County, a Spanish oak, *Quercus falcata*, 28 feet in circumference, and 110 feet high.

In Mississippi County, a sycamore, *Platanus occidentalis*, 43 feet in circumference, and the hollow was 15½ by 13 feet in diameter.

These facts, and the following catalogue of trees and shrubs, show the great value and variety of our vast forests. There is no physical reason why St. Louis should not export several times as much lumber as she now imports. Though Bangor, in Maine, exports more lumber than any city on this continent, and, perhaps, more than any in the world, the forests which supply it are located at a greater distance, and on streams much more impracticable than ours in Missouri.

It seems unnecessary to specify where good localities exist, for there is scarcely a stream in the State which is not bordered by forests of excellent timber. The Missouri, the Osage and all its tributaries, Spring River, Gasconade, Grand, Chariton, St. François, White, La Mine, South, North, Salt, and Fabius Rivers, are bordered with magnificent forests of the trees peculiar to the alluvium and upland slopes.

All of these streams, save the Missouri, furnish water-power and good mill-sites, and even the large springs of the Niangua afford the best water-power and mill-sites observed in the State. But steam has usually proved the most economical power for the manufacture of lumber, as the site can be selected with greater advantage.

CATALOGUE OF TREES AND SHRUBS OBSERVED IN MISSOURI.

Alder.

COMMON ALDER, *Alnus serulata.*—Near streams.

WINTER BERRY, *Prinos lævigatus.*—In wet, wooded bottoms.*

BLACK ALDER, *Prinos verticillatus.*—In wet woods.

Apple.

CRAB-APPLE, *Malus coronaria.*—On borders of prairies.

Angelica Tree.

ANGELICA TREE or HERCULES' CLUB, *Aralia spinosa.*—In dry soil.

Ash.

WHITE ASH, *Fraxinus Americana.*—In good soil.

BLACK ASH, *Fraxinus sambucifolia.*—Not abundant.

BLUE ASH, *Fraxinus quadrangulata.*—On good soil.

PRICKLY ASH, *Zanthoxylum Americanum.*—In bottoms and moist places.

Basswood.

AMERICAN LINDEN or LIME, *Tilia Americana.*—In rich soils, not very abundant.

LARGE-LEAVED LINDEN or LIME, *Tilia heterophylla* (?).†—Very common in rich soil.

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* When no localities are given, the species is generally diffused through the State, wherever appropriate soils occur.

† This tree agrees very nearly with Nuttall's, but the leaves are less tomentose; it also differs from Michaux's *alba*, in having the peduncles subdivided.

Beech.

Beech, *Fagus ferruginea.*—Common in the southeast.

Birch.

Red Birch, River Birch, *Betula rubra.*—On the borders of streams.

Blackberry.

Low Blackberry or Dewberry, *Rubus Canadensis.*—In open forests.

Wedge-leaved Blackberry, *Rubus cuneifolius.*—On the borders of prairies.

Bladder-nut.

American Bladder-nut, *Staphylea trifolia.*—Under bluffs and in ravines.

Buckeye.

Ohio Buckeye, *Aesculus Ohioensis* (?).—On the borders of streams.

Large Buckeye, *Aesculus lutea.*—In low rich soil.

Blueberry.

Blueberry, *Vaccinium vacillans.*—Dry hills in Taney.

Huckleberry, *Vaccinium* (?).—Dry hills in Taney.

Box-elder.

Box-elder or Ash-leaved Maple, *Negundo aceroides.*—In rich bottoms.

Burning Bush.

Burning Bush, *Euonymus atropurpureus.*—Very beautiful when in fruit.

Buttonwood.

Sycamore, *Platanus occidentalis.*—In the bottoms of all our streams.

Button-Bush.

Button-Bush, *Cephalanthus occidentalis.*—In wet places.

Catalpa.

Catalpa, *Catalpa bignonioides.*—In the southeast.

Cedar.

Red Cedar, *Juniperus Virginiana.*—On dry limestone bluffs.

Cherry.

Choke Cherry, *Cerasus Virginiana.*—In northern prairies.

Black or Wild Cherry, *Cerasus serotina.*—On the best soils.

Chestnut.

CHESTNUT, *Castanea vesca.*—In the southeast.

Coffee-tree.

COFFEE-TREE, *Gymnocladus Canadensis.*—In rich soil.

Cottonwood.

COTTONWOOD, *Populus Canadensis* (?).—In bottoms.

Coral-berry.

CORAL-BERRY or INDIAN CURRANT, *Symphoricarpus vulgaris.*—Everywhere.

Cross-vine.

CROSS-VINE, *Bignonia capreolata.*—In southern swamps.

Currant.

CURRANT, *Ribes.*—Several species, but none are abundant.

Cypress.

CYPRESS, *Taxodium distichum.*—In swamps.

Dogwood.

FLOWERING DOGWOOD, *Cornus florida.*—On bluffs and ridges.
SILKY CORNEL or DOGWOOD, *Cornus sericea.*—In wet places.
PANICLED CORNEL or DOGWOOD, *Cornus paniculata.*—In thickets.
ROUGH-LEAVED DOGWOOD, *Cornus asperifolia.*—Not common.

Elder.

COMMON ELDER, *Sambucus Canadensis.*—Very large in rich bottoms.

Elm.

WHITE or AMERICAN ELM, *Ulmus Americana.*—Abundant on the best soils.
RED or SLIPPERY ELM, *Ulmus rubra.*—On good soils.
WAHOO ELM, *Ulmus alata.*—In the south.

Grape.

SUMMER GRAPE, *Vitis aestivalis.*—Abundant on good soils.
FROST GRAPE, *Vitis cordifolia.*—On good soil, in bottoms.
MUSCADINE GRAPE, *Vitis vulpina.*—In the south.
RIVER GRAPE, *Vitis riparia.*—In bottoms.
VITIS INDIVISA.—Near Cape Girardeau.
VITIS BIPINNATA.—In Cooper and the northwestern counties.

Green Brier.

Green Brier, *Smilax rotundifolia.*—Very common in thickets.

Glaucus Green Brier, *Smilax glauca.*—In thickets and beside roads.

Smilax tamnoides.

Smilax bona-nox.

Smilax hastata.

Smilax Pseudo-China.

Gooseberry.

Prickly Gooseberry, *Ribes Cynosbati.*—In the central counties.

Wild Gooseberry, *Ribes rotundifolium.*—On borders of prairies.

Gum.

Black Gum, *Nyssa sylvatica.*—Near Iron Mountain.

Sweet Gum, *Liquidambar styraciflua.*—In the southeast.

Hackberry.

American Nettle-tree or Hackberry, *Celtis occidentalis.*—In rich soil.

Hackberry, *Celtis crassifolia.*—In rich soils and low grounds.

Hazel.

American Hazel, *Corylus Americana.*—In rich prairies.

Witch Hazel, *Hamamelis Virginica.*—In Taney.

Haw.

Black Haw, *Viburnum prunifolium.*—In forests, on good soil.

Red Haw. (See Thorn.)

Hickory.

Common or Mockernut Hickory, *Carya tomentosa.*—On rich soils.

Pecan, *Carya pecan.*—In the Missouri bottom.

Shellbark Hickory, *Carya squamosa.*—Abundant on dry, rich soil.

Thick Shellbark Hickory, *Carya sulcata.*—In rich bottoms.

Pignut Hickory, *Carya porcina.*—Rich soils on high land.

Black or Bullnut Hickory, *Carya microcarpa* (?).—On poor soil.

Bitternut Hickory, *Carya amara.*—On Caps' Creek.

Holly.

American Holly, *Ilex opaca.*—Rare in the south.

Honeysuckle.

Small-flowered Honeysuckle, *Lonicera parviflora.*—In northern counties.

Yellow Honeysuckle, *Lonicera flava.*—In southwest.

Hornbeam.

Hop-hornbeam, *Ostrya Virginica.*—Near rocky branches.

American Hornbeam or Iron-wood, *Carpinus Americana.*—Sparsely diffused.

Hydrangea.

Wild Hydrangea, *Hydrangea arborescens.*—On rocky bluffs.

Iron-Wood. (See Hornbeam.)

Judas-Tree.

Red Bud or Judas-Tree, *Cercis Canadensis.*—Abundant on good soil.

Locust.

Water Locust, *Gleditschia monosperma.*—In swamps.

Sweet or Honey Locust, *Gleditschia triacanthos.*—In the richest soils.

Common Locust, *Robinia pseudo-acacia.*—Naturalized.

Linden. (See Basswood.)

Maple.

White Maple, *Acer eriocarpum.*—In the river bottoms.

Sugar-Tree, *Acer nigrum*(?).—On good soil.

Red Maple, *Acer rubrum.*—In the swamps. South.

Mulberry.

Red Mulberry, *Morus rubra.*—On rich lands.

Nettle-Tree. (See Hackberry.)

Oak.

First division—leaves lobed, lobes rounded.

White Oak, *Quercus alba.*—Dry soil; excellent timber.

Over-cup White Oak, or Bur Oak, *Quercus macrocarpa.*—Low, rich soils.

Post Oak, *Quercus obtusiloba.*—Dry, poor soils; timber most durable.

Over-cup Oak, *Quercus lyrata.*—In southeast.

Second division—leaves coarsely toothed.

Swamp White Oak, often called Bur Oak, *Quercus bicolor.*—On low, damp soil.

Chestnut White Oak, *Quercus prinos.*—Wet, rich soil, in shaded places.

Rock Chestnut Oak, *Quercus monticola.*—On rocky bluffs.

Chestnut Oak, Yellow Oak, *Quercus acuminata.*—On limestone bluffs.

Chinquapin, or Dwarf Chestnut Oak, *Quercus prinoides*(?).—In the southwest.

Third division—leaves entire.

Laurel Oak, erroneously called Pin Oak, *Quercus imbricaria.*

Willow Oak, *Quercus Phellos.*—In southeast.

Fourth division—leaves lobed, lobes mucronate.

Bartram's Oak, *Quercus heterophylla.*—In Cooper and Pettis.

Black-Jack Oak, *Quercus nigra,* (Lin.)—On the poorest soils.

Black Oak, *Quercus tinctoria.*—On good and medium soil.

Scarlet Oak, *Quercus coccinea.*—On good soil.

Red Oak, *Quercus rubra.*—On damp, rich soil.

Pin Oak, *Quercus palustris.*—On low, wet soil.

Gray Oak, *Quercus ambigua.*—Very rare.

Spanish Oak, *Quercus falcata.*—In southeast.

Osage Orange.

Osage Orange, *Maclura aurantiaca.*—In the valley of Spring River.

Papaw.

Papaw, *Anona triloba.*—In rich soils.

Pecan-Nut. (See Walnut.)

Persimmon.

Persimmon, *Diospyros Virginiana.*—In good soil.

Pine.

Yellow Pine, *Pinus mitis* (?).—In the south.

Plum.

Red Plum, *Prunus Americana.*—In rich bottoms.

Chicasaw Plum, *Prunus Chicasa.*—In southwest.

Poplar. (See Cottonwood.)

Downy-leaved Poplar, *Populus heterophylla.*—In southeast.

Prickly Ash.

Prickly Ash, *Zanthoxylum Americanum.*—In wet places.

Rose.

Dwarf Wild Rose, *Rosa lucida.*—In prairies south.

Prairie Rose, *Rosa setigera.*—Very showy on the borders of prairies.

Cherokee Rose, *Rosa lævigata.*—In south.

Raspberry.

Red Raspberry, *Rubus strigosus.*—Common on the borders of fields.

Black Raspberry, or Thimble-berry, *Rubus occidentalis.*—In open forests.

Ratan.

Ratan Vine, or Wistaria, *Wistaria frutescens.* — Common south.

Sycamore.

Buttonwood or American Plane Tree, *Platanus occidentalis.*—In bottoms.

Sumachs.

Dwarf Sumach, *Rhus copallina.*—Common by the borders of fields.

Smooth Sumach, *Rhus glabra.*—In open forests.

Stag-horn Sumach, *Rhus typhina.*—Often in clusters in prairies.

Poison Ivy or Poison Oak, *Rhus toxicodendron.*—On rich soils.

Fragrant Sumach, *Rhus aromatica.*—Abundant in forests.

Spiraea.

Flowering Spiraea or Nine-bark, *Spiraea opulifolia.*—On limestone bluffs.

Spiraea Corymbosa.—On dry prairies.

Sassafras.

Sassafras, *Laurus sassafras.*—Common on medium soil.

Service-berry.

Wild Service-berry or Shad-Bush, *Amelanchier Canadensis.*—On bluffs.

Staff-Tree.

Staff-Tree, *Celastrus scandens.*—On river banks and broken bluffs.

Thorn.

Corkspur Thorn, *Cratægus crus-galli.*—In open forests.

Black Thorn, *Cratægus tomentosa.*—In forests.

Red Haw or White Thorn, *Cratægus coccinea,* (Gray)—In open forests.

Dotted Thorn, *Cratægus punctata.*—On bluffs and ridges.

Strawberry-Tree.

Strawberry-Tree, *Euonymus Americanus.*—In the southeast.

Trumpet Creeper.

Trumpet Creeper, *Tecoma radicans.*—Climbing over the bluffs and trees.

Tulip-Tree, (erroneously called *Poplar.*)

Tulip-Tree *Liriodendron tulipifera.*—In the southeast.

Tupelo.

Large Tupelo, *Nyssa uniflora.*—In swamps.

Virginia Creeper.

Virginia Creeper, *Ampelopsis quinquefolia.*—In rich soil.

Walnut.

Black Walnut, *Juglans nigra.*—Common in rich soil.

White Walnut or Butternut, *Juglans cathartica.*—In low, rich soil.

Pecan-nut, *Juglans olivæformis.*—In bottoms.

Willow.

Salix.—There are numerous species of willow in Missouri.

Winter Berry.

Winter Berry, *Prinos lævigatus.*—In low, wet forests and thickets.

Witch-Hazel.

Witch-Hazel, *Hamamelis Virginica.*—Taney County.

PUBLIC LANDS.

THE following propositions are a part of the compact formed between the United States and the State of Missouri, adopted July 19, 1820:

1st. That section 16 of every township be granted for the use of the inhabitants of such township, for the use of schools.

2d. That all salt springs, and six sections adjoining each, be granted to the State.

3d. That five per cent. of the net proceeds of lands lying within the said Territory or State, sold by Congress after January 1st, 1821, shall be reserved for making public roads and canals.

4th. That four entire sections be granted for the location of the seat of government.

5th. That thirty-six sections, or one entire township, together with lands heretofore reserved for that purpose, shall be reserved for the use of a seminary of learning, and vested in the Legislature of the State.

In a note to this article, in the Revised Statutes, the author says: "The school lands mentioned in the first proposition have been appropriated to the use of common schools. The salt springs and lands adjoining have been selected and disposed of. The lands for the location of the seat of government have been selected and appropriated. The university lands have been designated, and mostly disposed of."

The following is a copy of the "Graduation Act" of 1854:—

An Act to Graduate and Reduce the price of the Public Lands to Actual Settlers and Cultivators.

SEC. 1. Be it enacted, etc., that all the public lands of the United States, which shall have been in market for ten years or upwards prior to the time of application to enter the same under the provisions of this act, and still remaining unsold, shall be subject to sale at the price of one dollar per acre; and all the lands of the United States that shall have been in market for fifteen years or upwards, as aforesaid, and still remaining unsold, shall be subject to sale at seventy-five cents per acre; and all of the lands of the United States that shall have been in market for twenty years or upwards, as aforesaid, and still remaining unsold, shall be subject to sale at fifty cents per acre; and all of the lands of the United States that shall have been in market

for twenty-five years and upwards, as aforesaid, and still remaining unsold, shall be subject to sale at twenty-five cents per acre; and all lands of the United States that shall have been in market for thirty years or more, shall be subject to sale at twelve and a half cents per acre: *provided*, this section shall not be so construed as to extend to lands reserved to the United States in acts granting lands to the States for railroad or other internal improvements, or to mineral lands held at over one dollar and twenty-five cents per acre.

SEC. 2. *And be it further enacted*, that upon every reduction in price under the provisions of this act, the occupant and settler upon the lands shall have the right of pre-emption at such graduated price, upon the same time, conditions, restrictions, and limitations upon which the public lands of the United States are now subject to the right of pre-emption, until within thirty days preceding the next graduation or reduction that shall take place; and if not so purchased, shall again be subject to right of pre-emption for eleven months, as before, and so on, from time to time, as reductions take place: *provided*, that nothing in this act shall be so construed as to interfere with any right which has or may accrue by virtue of any act granting pre-emption to actual settlers upon public lands.

SEC. 3. *And be it further enacted*, that any person applying to enter any of the aforesaid lands, shall be required to make affidavit before the register or receiver of the proper land office, that he or she enters the same for his or her own use, and *for the purpose of actual settlement and cultivation*, or for the use of an adjoining farm or plantation owned or occupied by him or herself, and together with said entry, he or she has not acquired from the United States, under the provisions of this act, more than three hundred and twenty acres, according to the established surveys; and if any person or persons taking such oath or affidavit shall swear falsely in the premises, he or she shall be subject to all the pains and penalties of perjury.

Approved, August 4, 1854.

An Act to extend Pre-emption Rights.

Be it enacted, etc., that the pre-emption laws of the United States, as they now exist, be, and they are hereby extended over the alternate reserved sections of public lands along the lines of all the railroads of the United States, whenever public lands have been or may be granted by acts of Congress; and that it shall be the privilege of persons residing on any of said reserved lands, to pay for the same in soldiers' bounty land warrants, estimated at one dollar and twenty-five cents

per acre, or in gold and silver, or both together, in preference to any other person, and at any time before the same shall be offered for sale at auction: *provided*, that no person shall be entitled to the benefit of this act who has not settled and improved, or shall not settle and improve, such lands prior to the final allotment of the alternate sections to such railroads, by the General Land Office; *and provided, further*, that the price to be paid shall in all cases be two dollars and fifty cents per acre; or such other minimum price as is now fixed by law, or may be fixed upon lands hereafter granted; and no one person shall have the right of pre-emption to more than one hundred and sixty acres; *and provided, further*, that any settler who has settled or may hereafter settle on lands heretofore reserved on account of claims under French, Spanish, or other grants, which have been or shall be hereafter declared by the Supreme Court of the United States to be invalid, shall be entitled to all the rights of pre-emption granted by this act and the act of fourth of September, eighteen hundred and forty-one, entitled "an act to appropriate the proceeds of the public lands, and to grant pre-emption rights," after the lands shall have been released from reservation, as if no reservation existed.

Approved March 3, 1853.

An Act for the Relief of Settlers on Lands reserved for Railroad purposes.

Be it enacted, etc., that every settler on public lands which have been or may be withdrawn from market in consequence of proposed railroads, and who had settled thereon prior to such withdrawal, shall be entitled to pre-emption at the ordinary minimum to the lands settled on and cultivated by them: *provided*, they shall prove up their rights according to such rules and regulations as may be prescribed by the Secretary of the Interior, and pay for the same before the day that may be fixed by the President's proclamation for the restoration of said lands to market.

Approved, March 27, 1854.

The *Washington Union* gives the following as the mode of proceeding in making purchases of the public lands: When an individual applies to the register of a land district to purchase a tract of land, he is required to file a written "application." On such application the register indorses his certificate, showing the land is vacant and subject to entry. The certificate the applicant carries to the receiver, and it is the evidence on which the receiver permits pay-

ments to be made, and issues his "original receipt," the duplicate of which is handed to the purchaser as his evidence of payment, and which is required to be surrendered when a patent is forwarded from the General Land Office for delivery. The "original receipt" is handed to the register, who indicates the sale on his township plat, enters the same on his tract book, and is transmitted by the register to the General Land Office, with the monthly abstract of sales and certificates of purchase.

This is the formula prescribed for individual purchases, and must be preserved not only for their protection in securing titles, but for the protection of the interests of the government. The law has established two officers in a land district—the register and receiver—and prescribed a mode of proceeding to serve as a check upon each other. If a claimant fails to observe the requirements, he does it at his peril. If he deposits money with any person connected with the district office, even with a receiver, without having filed a written application with the register, he does so at his own risk, the government not being responsible for any loss where the terms on which the law authorizes entries are departed from.

Townships are numbered north and south; and *ranges* east and west. A *section* of land embraces 640 acres, and is 320 rods, 80 chains, or 5280 feet square. An *acre* may be measured in any shape thus: 1 rod by 160 rods; 2 rods by 80; 4 rods by 40; or 1 chain by 10 chains; 160 square rods or 4840 square yards. A French *arpent* is about one-seventh less than an English acre; contains in France 100 square rods or perches of 18 feet each.

The following extracts from the "Report of the Commissioner of the General Land Office," for the year 1858–59, will be of general interest:—

"From the passage of the act of August 4, 1854, up to the close of the fiscal year, ending June 30, 1858, 18,081,435·34 acres have been sold at the various graduated rates. Of these, 10,068,480·25 acres were sold at the lowest price of $12\frac{1}{2}$ cents per acre. And of the whole quantity, about 6,457,421 acres, or more than one-third, were sold in the State of Missouri."

The commissioner expresses his belief that the greater portion of the graduated lands have been entered by "unscrupulous individuals," and afterward bought up by speculators regardless of the law requiring settlement and cultivation, and suggests that the act of Congress "be so amended as to require the settlement and cultivation to be made, and proof of the fact produced in every instance before the entry of the land is consummated, the same as required under the

pre-emption act of 1841; else that the condition of settlement and cultivation be waived altogether."

The following statement exhibits the quantity of public land sold at the several land offices in this State during the fiscal year ending June 30, 1858, and the amount received therefor:—

Quantity of public land sold in Missouri during the fiscal year ending June 30, 1858, with the amount received for the same.

LAND OFFICES.	Sold at $1.25 an acre.	At $1.	At 75 cents.	At 50 cents.
	Acres.	*Acres.*	*Acres.*	*Acres.*
St. Louis	11,095·07	.....	3,266·93	3,766·04
*Fayette Boonville	2,600·81	.....	240·00	.....
*Palmyra	3,828·43	40·00	410·27	556·36
Jackson	28,576·53	526·70	2,906·32	33,792·44
Warsaw	40,981·45	18,385·85	62,554·83	40·00
Springfield	50,135·28	48,144·81	65,754·14	23,177·44
*Plattsburg	43,260·10	29,762·57	7,586·54	1,958·78
*Milan	25,789·13	5,079·89	6,829·32	.....
Total	208,266·78	101,939·82	149,448·15	63,301·06

LAND OFFICES.	At 25 cents.	At 12½ cents.	The aggregate quantity sold at all prices, and amount received for the same.	
	Acres.	*Acres.*	*Acres.*	*Amount.*
St. Louis	58,287·66	30,146·05	116,116·61	$38,679·58
*Fayette Boonville	43,944·96	52,413·42	99,199·19	20,969·81
*Palmyra	160·00	2,273·55	7,278·61	6,873·91
Jackson	85,999·35	1,009,334·57	1,161,185·91	207,925·08
Warsaw	39,082·22	40,622·31	201,566·66	135,520·92
Springfield	.....	.....	187,211·65	109,011·05
*Plattsburg	425·83	5,513·76	90,507·58	104,598·83
*Milan	.....	.....	37,698·34	49,741·39
Total	227,940·02	1,140,303·66	1,893,209·69	$881,125·82

The lands that were entered under the graduation law, in Missouri, at 12½ cents and 25 cents per acre, may be classed under three distinct heads:—

* All the land offices north of the Missouri River have been discontinued, and the business of the several former districts is now done at Boonville, Cooper County. St. Louis land district remains unchanged; extending north of the Missouri River as heretofore.

1st. **Pine Lands.**—These were in a limestone district, timbered with yellow pine, mixed with oak and hickory on the ridges, and ash, walnut, and sugar tree in the valleys, supplied with water by numerous springs and clear running brooks. The agricultural lands of these districts are all in the valleys, and the valleys generally narrow; yet the soil being formed of decomposed limestone and sandstone is very productive.

2d. **Limestone Districts.**—Wide flat ridges, not very deep valleys, small growth of oak and black-jack timber; partial prairies or openings in places; uplands good for wheat and all small grains. There is timber sufficient for fencing and fuel in these districts, and good water procured by digging wells or cisterns. The soil is well adapted to fruit and grape culture, and the climate pleasant and healthy.

3d. **Mineral Lands.**—These include lead, iron, and copper lands; are a broken limestone country, plenty of springs and clear creeks; agricultural lands in the valleys; considerable of flint on the sides of the ridges, and very red clay exposed. There is, probably, from fifty to 100 acres of agricultural lands on each half section of this class.

Some idea may be formed of the rapidity with which Missouri is gaining favor, from the following facts, which we gather from the last Report of the General Land Office.

The amount of Public Lands sold in Ohio, Indiana, Illinois, Missouri, Alabama, Mississippi, Louisiana, Michigan, Arkansas, Florida, Iowa, Wisconsin, California, Minnesota, Oregon Territory, Washington Territory, Kansas and Nebraska, at $1 25 per acre, was 817,529·35; of which 208,166·78, or more than one-fourth, were in Missouri. The total amount of cash paid into the Treasury by these eighteen States and Territories during the said fiscal year (ending July 1, 1858,) was $3,213,715 87; of which $837,719 83, or more than one-fourth, was from the sales of Missouri lands. There were entered during the year 2,987,379·11 acres of land under the graduation act; of which 1,682,942·91 were in Missouri, being three hundred and seventy-eight thousand five hundred and six acres more than half the amount entered by all the other States and Territories.

Complaint has been made, by the people of Southeastern Missouri especially, that the surveys were incorrect—that a great proportion of land that had been returned as swamp or overflowed land is really dry or arable land. The schedules furnished by State agents have been examined, and as the following table shows that of the 1,031,803·37 acres reported as swamp lands, there are really, upon careful examination, 968,712 95 acres of dry, tillable land.

PUBLIC LANDS.—THE HOMESTEAD LAW.

The "Act to graduate and reduce the price of public lands," as given on page 169, has been repealed; a provision is made, however, that any parties who, under this law, selected a homestead, and were prevented from living upon the land during the war, by being in the service of the army or navy of the United States, and who enter upon the land as their home immediately upon discharge from such service, shall be entitled to its full provisions and benefits.

The privileges of the Homestead Law (passed May 20th, 1862) are extended to every person who is the head of a family, or who has arrived at the age of twenty-one years, and is a citizen of the United States, or has declared his intention of becoming such, and who has done no disloyal act, direct or indirect. An exception, however, to the foregoing requirement as to *age* is made in the sixth section of the act, in favor of any person who has served not less than fourteen days in the army or navy of the United States, either regular or volunteer, during actual war, domestic or foreign. Any person coming within the foregoing requirements will have the right to enter one quarter section, or a less quantity, of unappropriated public land, upon which said person may have filed a pre-emption claim, or which, at time of application, is subject to pre-emption at $1·25 per acre; or eighty acres, or less, of such unappropriated lands, at $2·50 per acre.

The law requires the land "to be located in one body, in conformity to the legal subdivisions of the public lands, and after the same shall have been surveyed."

Any person owning and residing on land may enter contiguous land, which, with that already owned and occupied, shall not exceed in the aggregate one hundred and sixty acres.

The applicant for the benefit of the law is required by the second section to file with the Register his "application," which should designate the tract desired to be entered. He must also file his "affidavit," to be taken before the Register or Receiver, setting forth the facts which bring him within the requirements of the law, and adding that the "application is made for his or her exclusive use and benefit, and that the said entry is made for the purpose of actual settlement and cultivation, and not, either directly or indirectly, for the use or benefit of any other person or persons whomsoever."

The applicant will then be allowed to enter the tract applied for, by paying to the Receiver the $10 fee st pulated in the act; and the

further payment, as *commissions* of Register and Receiver, *of one per cent.* to each upon the cash value of the quantity of land applied for.

The fourth section declares lands acquired under this act not liable for debts contracted prior to the issuing of the patent.

The five-year settlement is an absolute, unconditional requirement, in regard to all persons, except soldiers and sailors in active U. S. service, who only for the period in which after entry they are in such service are relieved, but with the positive requirement that after discharge they must go on the land and reside upon and cultivate it as their home until the expiration of the five years. A change of residence for more than six months at a time, works a forfeiture, and the land reverts to the government.

Agricultural College Scrip (issued under an act approved July 2, 1862) entitles the assignee of the State to which it was issued (or the holder of the scrip) to one quarter section (160 acres) of any of the unappropriated lands of the United States, subject to entry at $1·25 per acre. This must be located upon a legal subdivision according to the U. S. Survey, and any fraction less than any quarter section, if located with this scrip, must be charged for the same as if the whole 160 acres had been selected,—in a word, the holder of the scrip may locate 160 acres, 120, 80, or 40, but it must be in the same "quarter," and will cost him the face of the scrip.

The State is divided into three Land Districts. The **Ironton District**, bounded on the north by the township line between Townships 37 and 38, starting from the Mississippi River just south of Ste. Genevieve, extending due west to the line between Ranges 10 and 11 West, thence due south to the State line. Office at Ironton. The **Springfield Land District** embraces all between the last-named north and south line and the western boundary of the State; bounded on the north by the line between Townships 34 and 35. Office at Springfield. The **Boonville Land District** embraces all the land in the State not within the above named districts. Office at Boonville.

There are now (1867) about three million acres of government land in this State, subject to entry at $1.25 and $2.50 per acre—the latter within railroad reservations—which can be located with cash, land warrants, Agricultural College scrip, or under the Homestead Law. These lands are situated in the following named counties: Barry, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Dade, Dallas, Dent, Douglas, Dunklin, Franklin, Gasconade, Greene, Henry, Hickory, Howell, Iron, Jefferson, Laclede, Lawrence, Linn, Macon, Maries, McDonald, Miller, Newton, Ozark, Pemiscot, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. François, Shannon, Stone, Taney, Texas, Webster, Wright.

DESCRIPTION OF COUNTIES.

ADAIR COUNTY.

This county is situated in the northeastern portion of the State, bounded on the east by Knox, on the south by Macon, on the west by Sullivan, and on the north is separated from the Iowa State line by Schuyler and Putnam Counties. Area about 630 square miles.

It was first settled in 1831–32 by a few families from Kentucky. In 1850 its population numbered 2351, and in 1856, 6535; present population (by U. S. Census, 1860,) 7991.

Physical Features.—This county embraces a desirable division of prairie and timber land. The prairies extend through the county in a north and south direction, upon the divide between Chariton and Salt Rivers, which streams, with their tributaries, are well timbered. Bituminous coal, and limestone and sandstone for building purposes, are abundant.

Soil and Productions.—The soils are very fertile, and well adapted to all purposes of the farmer or stock-grower. Some farms yield per acre, of corn, sixty bushels; wheat, forty; oats, forty; rye, twenty-five; buckwheat, twenty; potatoes, three hundred; timothy, two tons; Hungarian grass, three tons, and an abundant yield of fruit of all kinds.

Churches and Schools.—Of church organizations, we are informed there are O. S. Presbyterians, Cumberland do., Methodist Episcopal South, Baptists, and Reformers or Christians, with upwards of 500 members. There are forty-seven common-school districts in the county, and twenty-six school-houses. The amount raised in 1858 to build and repair school-houses was $344. A select school was established at Kirksville, in the fall of 1857, which promises to be instrumental in doing great good in the hands of the two teachers in charge. Two other select schools are taught at the county-seat, by ladies, and supported in part by the public funds. The amount of school money apportioned to Adair County, for 1859, is $2011 25.

Industrial Pursuits.—There are in this county one newspaper, eight lawyers, eighteen physicians, twelve merchants, five grocers, two liquor shops, one druggist, two silversmiths, two tinners, six blacksmiths, one gunsmith, five wagon-makers, one saddler, two tailors, three shoemakers, two cabinetmakers, twenty-five carpenters, thirteen steam and water power saw-mills, two coopers, four flouring-mills, (steam and water power,) and five hotels, which are generally very well kept.

KIRKSVILLE, the county-seat, is pleasantly situated on the western margin of a beautiful prairie called the "Grand Divide," on the located line of the North Missouri Railroad, due north of Hudson, the present terminus, and the center from which radiate five stage routes—to Canton, sixty-five; Macon City, thirty-five; Trenton, sixty-one; Shelbyville, forty-five; and Lancaster, twenty-five miles. It is now an important town, and has bright prospects for the future. Population 1000.

The other towns in the county are **Wilson, Nineveh, Shelby's Point,** and **Wilmotsville.** When the North Missouri Railroad is completed through this county, (and it is now being vigorously pushed forward,) it will give the farmers and manufacturers a ready market at their very doors, and we shall look for a rapid growth in wealth and importance in every county along its line.

ANDREW COUNTY.

This county was first settled in 1837, by Joseph Walker, Esq., and in 1850 contained 9434 inhabitants, and it now, 1860, contains a population of 12,082. Is bounded on the west by the Missouri and Nodaway Rivers, on the south by Buchanan, and separated from the Iowa line by Nodaway County. The land is fertile and rolling; more timber than prairie. The average product of farms, is of hemp, 500 to 600 pounds per acre; corn, 100 bushels; wheat, 40; oats, 30; buckwheat, 50; potatoes, onions, and beets, immense crops; 600 to 800 gallons of wine to the acre; also good yields of all kinds of grasses and most varieties of fruit; unimproved land is held at from $1 25 to $5, and improved from $12 to $50. Water power has been improved and is in use on the One-Hundred-and-Two, the Platte, and Nodaway.

There are in the county 6 churches, 3 private schools, 1 newspaper, 6 hotels; 1 bank, (Branch of Southern Bank of Missouri,

located at Savannah;) lawyers, 7; physicians, 7; merchants, 16; grocers, 4; druggists, 3; silversmiths, 2; tinner, 1; blacksmiths, 4; wagon-makers, 4; saddler, 1; tailors, 4; shoemakers, 4; cabinet-makers, 3; carpenters, 6; saw-mill, 1; steam flouring-mill, 1; mason, 1. Emigrants will here find good farming land, well supplied with timber and water, and a good market.

SAVANNAH, the county-seat and principal town, twelve miles from St. Joseph, and five miles from the Missouri River, on the projected line of the Platte County Railroad. The situation is elevated, and the view afforded of the surrounding country is extensive. The first house was built here in 1842, and there is now a town of 1000 population, with four churches, a Masonic Lodge and Chapter, Odd Fellow's Lodge and Encampment, a bank, and full supply of business houses of all classes. Surrounded by intelligent farmers and peopled by industrious citizens, the prospects of the town and county are very fair. An excellent court-house has recently been erected, which speaks well for the enterprise and liberality of the citizens. Population of **Fillmore**, 400; **Rochester**, 300; **Amazonia** and **Boston** united, 250; **Whitesville**, 150.

ATCHISON COUNTY.

This county is situated in the extreme northwestern part of the State, bounded on the west by the Missouri River, which separates it from Nebraska, and on the north by the Iowa State line. This is a new county, but was settled in 1840, and in 1850 contained a population of 1678; in 1856, 3304; and in 1860, 4663.

Physical Features, Soil, etc.—About one-half of the county is level and undulating, and the other half somewhat broken. About one-third is timber land, the remainder prairie. The soil is generally very fertile, and well adapted to farming and grazing purposes. Corn, wheat, oats, hemp, and tobacco are the principal products.

Inducements to Immigration.—Farmers and mechanics are much needed. There is a large amount of fertile land vacant, and 1460 acres of school lands unsold. Good water power unimproved upon the Nishnabotana, Tarkeo, and Rock Creek. Facilities for reaching market are offered by the Missouri River, which washes the western border of the county, and the Council Bluffs and St. Joseph Railroad is being built through the county.

ROCKPORT, the county-seat, is a brisk town of 800 population; **Linden**, 200; and **Sonoro**, 300 population. The seat of justice was

moved from Linden to Rockport, in 1856. There is one newspaper in the county, "Rockport Weekly Herald." The county contains a number of churches, eighteen school-houses, a high school, Odd Fellow's Lodge, etc., and a good representation of business houses.

AUDRAIN COUNTY.

This county is situated north from the center of the State, bounded on the east by Pike and Montgomery, on the west by Randolph and Boone, on the north by Monroe and Ralls, and on the south by Boone, Callaway, and Montgomery Counties, and embraces an area of 680 square miles.

Population of Audrain County, in 1840, was 1949; in 1850, 3508; in 1856, 6130; and in 1860, 7920.

Physical Features.—The face of the country is generally rich, undulating prairie, interspersed with timber—about three-fourths being prairie. Being on the high lands or "divide" between the Mississippi and the Missouri, the climate is healthy, and the numerous streams running north, south, and east furnish a good supply of water.

The **Soil** is well adapted to the growth of grasses of all kinds, oats, and corn, hence favorable for stock growing. All kinds of grain, grasses, fruit and vegetables produce well here, and farmers will find excellent land, favorably located, at low prices, and a good demand for all kinds of produce.

Industrial Pursuits.—Of lawyers in the county, there are 7; merchants, 12; newspaper, (Missouri Ledger,) 1; physicians, 4; hotels, 2; groceries, 2; tailors, 3; harnessmaker, 1; silversmiths, 2; cabinetmakers, 2; carpenters, 8; drug store, 1; tin and stove stores, 2; boot and shoe shops, 2; blacksmiths, 2; and mechanics of various kinds much needed. The county is traversed by the North Missouri Railroad, affording good facilities for reaching market, and the introduction of railroad communication has given the county a new impetus which will doubtless add greatly to its development and importance the present year.

MEXICO, the county-seat, on the North Missouri Railroad, is a promising village of about 1500 inhabitants, with a good country trade extending twenty-five miles in every direction. Manufactories of woolen goods, farming utensils, carriages, etc. could be established here profitably. Mexico was incorporated as a city, February 7, 1857.

BARRY COUNTY.

This county is situated in the southwest corner of the State, and originally embraced all the territory from which the counties of Lawrence, Dade, Barton, Jasper, Newton, McDonald, (and in part Cedar) have been formed. The land of this county is generally undulating and fertile, with a good division of each prairie and timber. The county offers great inducements to those wishing to engage in mining, farming, manufacturing, or stock raising. The average yield from farms are as follows: wheat, 30 bushels; corn, 60; rye, 25; oats, 40; potatoes, 100; onions, 100; tobacco, 1200 pounds; turnips, 200 bushels; timothy and clover, each 2 tons; Hungarian grass, 2½ tons; beets and carrots grow finely. Of fruit, apples, pears, peaches, plums, and most kinds of berries are abundant. The present market for the county is at Linn Creek, 135 miles distant. The great drawback to this section is the want of an outlet to better markets. The distance from the county-seat to Jefferson City is 215; to St. Louis, 310; and to nearest point on railroad, (Syracuse,) 135 miles. The price usually asked for lands here is from $3 to $5 for unimproved, and from $8 to $12 for improved lands. The Southwest Branch of the Pacific Railroad, now being constructed, will pass through or along the north line of this county for six or eight miles.

There are five streams running through the eastern, western, and central portion of the county, which have good water power, that can be improved to advantage. In the county are one steam flouring-mill, and six water-power grist and saw mills.

Population, in 1860, 8008.

Churches and Schools.—Of Cumberland Presbyterians there are 200; Methodists, 250; Baptists, 400; Christians or "Campbellites," 150. There are thirty free-school districts in the county, with 1095 pupils, and one select school, at Keetsville, will be well supported.

Of business houses, there are in the county—hotels, 3; merchants, 11; druggists, 3; lawyers, 3; doctors, 13; silversmith, 1; blacksmiths, 22; wagon-makers, 5; saddler, 1; tailors, 2; cabinetmaker, 1; carpenters, 20. No tinners, shoemakers, or tobacco manufacturers.

The northern part of Barry is well supplied with good building material, and lead has been found in considerable quantities in various parts of the county. Shafts have been sunk on the northeast quarter of section 19, township 25, range 25, with success.

CASSVILLE, the county-seat, has a population of about 400, and is pleasantly situated in the valley of Fat Creek—a valley containing fine arable lands. The appearance of Cassville was much injured by fire last spring, which swept off nearly all the principal business houses of the place. A new court-house, forty by sixty feet, nearly completed; is a handsome building, adding much to the appearance of the town. Various improvements are going on, among which a fine steam mill is being erected in the vicinity by Mr. Logan. It runs three pairs of burrs, and is enabled to supply the country with flour and meal. In addition to this, two fine steam saw-mills are in full blast within a short distance of town, able to supply a large section of country with any quantity and quality of lumber desired.

BARTON COUNTY.

This county, situated in the west-southwest portion of the State, is bounded on the north by Vernon, on the south by Jasper, on the west by Kansas Territory, and on the east by Cedar and Dade Counties, and contains an area of 600 square miles.

Physical Features, Soil, etc.—This county is generally high table-lands, sufficiently undulating to be well drained, yet level enough for all agricultural purposes. The county is principally prairie, interspersed with extensive groves of timber, consisting of linn, hickory, oak, locust, walnut, sycamore, cedar, cottonwood, and elm, of which, if properly husbanded, there will be sufficient for all practical purposes. The county is drained by the head branches of Dogwood, Clear, and Horse Creeks on the north, and by the Coon, Muddy, and other tributaries of the Neosho, on the south. Comparatively, the soil is very good; the gravelly ridges are well adapted to fruit culture.

Coal is abundant in many parts of the county, and beds have been opened, and are worked, from three to four miles east from the county-seat. Limestone and sandstone for building materials, clays and sands for brick-work, and gravels and pebbles for walks and roads are abundant.

Barton County was formed from the north half of Jasper County, and organized December 12, 1855. It now, 1860, contains a population of 1837.

LAMAR, the county-seat, was located March 15, 1856, and is situated near the center of the county, upon the east bank of Muddy Creek, which enters the southeast corner of the county, runs in a northwest course to the center, then bears almost due south to its southern boundary. This stream is skirted with groves of oak, elm, and walnut, and Lamar is almost surrounded by an extensive grove of timber.

Nashville is a new town in the southwest corner of the county. The principal settlements are near the county-seat, and in the eastern part of the county.

A new court-house, and several large business houses, are in course of erection in Lamar, and the county throughout seems to be in a prosperous condition.

BATES COUNTY.

This county is situated on the western border of the State, and its northern boundary is very near the middle of the State, on a north and south line. The county is bounded on the north by Cass, south by Vernon, and east by Henry and Sullivan, with an area of 1380 square miles. It was named in honor of Frederick Bates, a former Governor of the State. Population in 1850 was 3669; in 1856 it was 5702; and in 1860, 7250.

History.—The territory now embraced within this county was first settled by missionaries sent out by the American Board of Foreign Missions in 1818. They met with a band of the Big and Little Osage Indians, and told them they had come to do no harm, but to teach them many new things that they did not know, and that they wanted a piece of land to establish a school upon, where they would educate the Indian children. Much pleased with the proposition, the Indians soon called a council of their whole nation, numbering some 8500. They met upon the banks of the Marias des Cigne. White-hair, the old chief, made a great speech expressing his gratification that good-hearted pale-faces had come among them; and, assuring them peace and protection, he pointed out a piece of land embracing about ten miles square where they might make them a home. The missionaries told them they did not want so much—that they would be satisfied with much less. The treaty was ratified at St. Louis in 1821, securing to them two sections on the Marias des Cigne. They called the place "Harmony Mission," established a school, and set out 1300

fruit trees, (which, however, the woodman's axe and the prairie fires have reduced to 400.) Great good resulted from the establishment of this mission, and one secret of the peace and tranquillity of the Osages for a number of years may be attributed to the fact that wherever a band of Osages were met by whites, afterward, one of their number was a mission pupil who could interpret between the whites and the Osages, and thus prevent misunderstanding and collision. The mission was afterward removed into the Osage nation.

The Harmony Mission* was projected in the latter part of the year 1820. It was established August 2, 1821. The whole number of souls, including adults and children, was forty—twenty-two adults and eighteen children.

It required, by the mode of conveyance then available, near six months for the missionaries to reach their station, now in Bates County. The school was opened about the beginning of the year 1822. It was continued in operation near fifteen years. Some 400 children and youth were, during that time, received under a course of instruction, and boarded in the mission family.

The largest proportion of the pupils were from the Osage tribe, and made very commendable progress in the rudiments of an English education. Some few became quite advanced. The most of them are now dead. The adults seemed to profit but little from any of the efforts made for their improvement.

At the time the mission was established, twenty-five miles on the western border of the State had not been purchased by the Government. In 1828 this strip of country was treated for, and the Indians removed farther west. In this treaty a reserve of two sections was made for the use of the Mission. This still remains unsold.

The Mission was given up and the missionaries disbanded in 1837.

But few of the first missionaries remain in this part of the country; they are either dead or removed elsewhere. In 1821, when the Mission was first established, the nearest white settlements were in Lafayette County, near Lexington, about eighty-four miles. In 1825 the United States Government established a supply trading-post about two miles below the Mission, where Papinsville now stands, which was kept by a man named Gero. In 1835, the Osages having moved south, the missionary station was abandoned, and the school which had been in a flourishing condition for fifteen years, was broken up. They sold the property to the Government for $8500, which sum is

* We are indebted to A. Jones, Esq., of Bates County, for a history of this Mission.

now subject to the order of the American Board of Foreign Missions, for the benefit of the Osage Indians. Another section of land has been added by Congress, and the whole transferred to the War Department. The place is now held, we are informed, and governed by "squatter sovereignty."

Physical Features.—Bates County is situated upon the dividing ground between the waters of Grand River on the north, and Marias des Cigne on the south. The prairies are high, rich, and rolling. The only poor land in the county is that upon the high limestone ridges, which are covered with timber. In the northwest part of the county the prairies are large. The bottoms along the larger streams are very well timbered with the different varieties of oak, black walnut, hickory, maple, cottonwood, pecan, sycamore, elm, and mulberry. The Marias des Cigne is the same stream known in Kansas as the Weeping Water, and after it is joined by other tributaries in the next county south it takes the name of Osage River. This is a beautiful stream, and has a natural channel of from three to five feet deep. In spring seasons steamboats run up to Papinsville. During high water the low bottoms on each side of the stream are overflowed. There are several thousand acres of swamp land in the county of a good quality. Limestone and freestone are abundant, and indications of lead and iron ore are said to exist in some localities. Springs are abundant in many portions of the county.

Soil and Productions.—The soil is very fertile, producing a good yield of nearly all kinds of grain products. Corn is the staple product, and is a certain crop. Wheat is but little raised. Nothing produced in the county for market except stock. Sheep have proved the most healthy and profitable kind of stock to deal in, in this county. All the grasses grow well. As to the adaptation of the soil and climate to fruit culture, we need only state that the trees planted by the missionaries in 1820 have never been known to fail in their yield a single year since they commenced bearing. This county is remarkably healthy.

The Osage Valley and Southern Kansas Railroad is being built, and bids fair to be pushed forward rapidly to completion; and as it will be a direct line from Southern Kansas, passing through Bates County, it will be of great advantage to the citizens.

Business Statistics.—There are in the county-seat six lawyers, one newspaper, five physicians, five merchants, four grocers, one druggist, one silversmith, two tinners, two blacksmiths, two wagon-makers, one saddler, one tailor, one shoemaker, two cabinetmakers, twelve carpenters, one saw-mill, (steam,) one cooper, two hotels, three churches,

(one each, Baptist, N. S. Presbyterian, and Methodist,) and one public school. The other towns have a fair average of business houses.

Natural Advantages.—Besides what has already been said of the county and its productions, we may add that labor is in good demand, and that this is an excellent location for stock growing. Uncultivated land is worth from $3 to $5 per acre; cultivated, from $5 to $20 per acre.

Churches and Schools.—There are but two church edifices in the county—one Baptist, and one Presbyterian. The school-houses are all used for religious meetings.

There are, in Bates County, twenty-five school townships, forty-five district schools, a majority of which have school-houses, (principally cabins,) 2500 school children, with an annual school fund of $8000.

BUTLER, the county-seat, is located near the Miami Creek, one of the head branches of the Osage, and twelve miles from the Kansas line. The location is elevated, commanding, and the surrounding country beautiful. The hill upon which the town is located occupies an area of about one and a half by two and a half miles, and the site possesses many attractions and natural advantages. Butler was first settled by John E. Morgan in 1851, and now contains about 500 inhabitants, a Christian Church, Odd Fellows and Masonic Lodges, academy, newspaper office, etc.

Papinsville, two miles below old Harmony Mission, has about 200 inhabitants. The road passing through it is a great thoroughfare. The river is bridged at this place, and all the streams on this road, both north and south, are also bridged, which speaks well for the enterprise of the citizens.

Johnstown, fifteen miles from Butler, on the Tipton road, contains 150 population, and was incorporated March 12, 1859.

West Point, 100 population.

Prairie City is a temperance town, three miles from Papinsville on the Osceola road. No spirituous liquors are sold as a beverage. Population 150.

Uniontown changed to **Crescent Hill,** March 12, 1859.

BENTON COUNTY.

This county is situated in the west central part of the State, bounded on the east by Morgan and Camden, on the west by Henry and St. Clair, on the north by Pettis, and on the south by Hickory County.

Physical Features.—The general character of the county is broken; about one-fourth being undulating prairie, the remainder rough timber land. The northern portion is principally prairie, and the center, along the Osage River, (upon which is situated Warsaw,) the county is broken and hilly, with excellent timber, and some extensive bottoms under a good state of cultivation. The county is drained by the Osage, Grand River, Thibeau, Cole Camp Creek, Pomme de Terre, and Turkey Creek. The streams are clear, cold, rapid, and generally gravel bottomed, and in many places the towering cliffs that overhang the streams, crowned by cedars hanging from the fissures in the rocks, render the scenery truly grand. There are some excellent mill sites upon the streams in this county, and milling or manufacturing would prove very remunerative. There are several saw and grist mills in the county.

The **Osage River** is navigable as high as Manoa, a new and thriving town just laid out twenty miles from the western boundary line of the State, (now in St. Clair County,) and a distance of 270 miles from its confluence with the Missouri River. During the year (1859) no less than 8000 tons of freight have been shipped from St. Louis to the various points on the Osage; the greater part of which was delivered at the mouth of the Osage by the Pacific Railroad, and taken thence by small steamers to the different trading points above — Linn Creek, Warsaw, Oseola, Manoa, and minor points.

In Benton County, improved lands sell at from $5 to $30 per acre; unimproved, at from $2 to $10. The crops usually raised are corn, wheat, oats, rye, tobacco, etc. The principal produce for shipment consists of wheat, pork, beef, and tobacco. There is annually driven to the Southern markets mules and horses to the amount of some $50,000.

Minerals.—Lead ore has been found in paying quantities in various parts of the county, and mining promises to become an extensive and lucrative business. A number of years ago, Mr. H. H. White erected

an ash furnace and manufactured a considerable quantity of pig lead, about eight miles southeast from Warsaw, on Turkey Creek. At several localities, on the south side of the Osage River, rich veins have been discovered, and some two or three of them are now being profitably worked. Near Duren's Creek, on the north side, an old man, assisted by a boy, has taken out, while prospecting, within the last year, over 70,000 pounds of ore, which will yield from seventy-five to eighty per cent. A furnace for smelting is being erected. Now that the Osage is navigated by steamboats, and a railroad being built to traverse the county, the obstacles to working the mines are removed, (there being better facilities for reaching market,) and it is hoped that the mineral resources of the county will soon be fully developed. Gold, it is said, was found in this county by Mrs. Ann Walters in 1852; and that in 1856, she found several pieces more; and in June, 1859, she visited the same place again and collected fully a "tablespoonful of pure gold." She has not made known the locality of "the precious ore," though besieged by hundreds who gathered around her and "prospected" in her neighborhood in the summer of 1859. We place but little confidence in the reports, however, but give them for what they are worth.

History.—The first settlements in the section of country now embraced by this county were made by Bledsoe, Kinkead, and Howard in 1834. Warsaw was first settled by D. C. Ballou, and a post-office established there in 1836 or 1837. Bledsoe's ferry, on the Osage, was in early days a noted crossing, as the road from Palmyra, through Boonville, to Fort Smith and the Cherokee Nation crossed here. In 1836 there were two stores at this point, and the courts were held at a dwelling-house in the vicinity. Near to Bledsoe's, and on the right bank of the Osage, was the site of a once important and populous Shawnee village. Bledsoe's ferry was one of the first settlements in this part of the State; Osage was the former county-seat, established about 1838, and some years after the name was changed to Warsaw.

Advantages.—This county offers to immigrants good land at low prices, an abundance of timber, building stone, sand, or clay for brick, good prices and a ready market, water power, and a demand for farmers and mechanics of all kinds. Population of county in 1856, 6786; in 1860, 9142; unsold school lands in county, 5290 acres.

The productiveness of the soil of this county, together with the prospect of rich mineral deposits, and a climate not excelled in the State for health, and river navigation for half the year, and con-

venience to railroads, make this a desirable location for "*industrious men.*"

Churches and Schools.—The proprietors of Osage (when the county-seat) made arrangements for establishing a seminary there in 1838. There is now one male and female academy, and two common schools in Warsaw, and forty-nine school-houses, (and 5290 acres of unsold school land) in the county. There are several churches—N. S. Presbyterian, Methodist, Baptist, and Reformers—in the county.

WARSAW, the county-seat, occupies an elevated site, overlooking the Osage River and an extensive area of surrounding country. It is a thrifty business point, about eighty miles from Lexington on the Missouri River, eighty from Boonville, eighty from Jefferson City, and forty from Syracuse on Pacific Railroad. Distance to nearest railroad, about thirty-five miles from Georgetown station on Pacific Railroad. There are in Warsaw, 1 bank, (Branch of the Mechanics' Bank of St. Louis,) United States Land Office, 1 newspaper, (the "*Southwest Democrat*," by Murray & Leach,) 4 lawyers, 8 merchants, 1 druggist, 1 silversmith, 2 tinware and stove stores, 3 blacksmiths, 2 wagon-makers, 2 saddlers, 1 tailor, 2 boot and shoe shops, 2 cabinetmakers, 6 carpenters, 1 tobacco manufactory, 2 steam saw-mills, 1 cooper shop, 2 hotels, etc. Also, Lodges of Masons and I. O. O. F., etc. Population of Warsaw, 1000.

Cole Camp is twelve miles from Warsaw, in a well settled portion of the county. The town was laid out by Blakey and Brother in 1857, and now contains a population of 400. Being on the line of the Osage Valley and Southern Kansas Railroad, the citizens very reasonably anticipate a rapid growth of the town upon the completion of the road.

Durock has 250 inhabitants; and **Fairfield**, 100 inhabitants.

BOLLINGER COUNTY.

This county is situated in the southeast corner of the State, and was created in 1850, principally from Cape Girardeau. The first settlement made in the territory now composing this county was in 1800 by North Carolinians. The general surface of the county is broken, but the land is fertile and well timbered. The usual yield per acre is as follows: Corn, 75 bushels; wheat, 30 bushels; rye, 25; barley, 30; oats, 30; buckwheat, 20; potatoes, 300; onions, 100

beets, 50; carrots, 40; turnips, 200 bushels; timothy, 2 tons; clover, 1 ton; Hungarian grass, 1 ton; and peaches, pears, and apples in abundance. The principal market is at Cape Girardeau, on the river, thirty miles distant, to which point a gravel road is being constructed.

Beds of iron ore exist in the county, but have never been worked. There are 6010 acres of unsold school lands in the county.

Population of Bollinger in 1860, 6196.

Mr. F. Woolford, at Patton Post-office, has discovered in Bollinger County immense quantities of kaolin, which is so highly prized in Europe for the manufacture of porcelain ware; also, cornish stone for the manufacture of iron-stone china ware. He has also discovered pipe or ball clay of a good quality, and extensive deposits of the best quality of fire clay, which he infers is well adapted to the manufacture of fire bricks or good "glass pots," as it has been subjected to 140 degrees of Fahrenheit without affecting it in the least. Also an abundance of pure quartzose sand, well adapted as a source of silex in the brazing and glazing of china and porcelains, and which would make the finest description of glass. Mr. Woolford concludes his communication thus: "Now I would just ask, how long shall we be dependent upon Europe for our ware which spreads or furnishes the tables of our elegant and magnificent hotels, and every private house, even to the humblest cottage in the land? Bristol would be a good point or location for the establishment of a regular factory for the manufacture of such wares as would be wanted in this western country. We have cheap building lots, cheap fuel, cheap labor, cheap materials, in a healthy place, and in another year we will have a good gravel road to the river."

DALLAS, the county-seat, contains 300 inhabitants, of whom there are lawyers, 3; physicians, 2; merchants, 5; grocers, 2; druggist, 1; blacksmiths, 2; saddler, 1; hotel, 1; carpenters, 3. There is one steam flouring-mill; also one Missionary Baptist Church, with some 30 members, of which Rev. Geo. W. Coke is pastor. Dallas was incorporated December 6, 1855.

BOONE COUNTY.

This county, situated near the center of the State, is bounded on the north by Audrain and Randolph, on the west by Howard, on the east by Callaway, and on the southwest by the Missouri River, which meanders along its southwestern border, a distance of some thirty-four miles, separating this from Cooper, Moniteau, and Cole Counties. The population of Boone County, in 1840, was 13,561; in 1850 it was 14,981; in 1856, 17,248; and in 1860, 19,598.

History.—Boone County was formed from Howard. The first settlements made in the territory now embraced by the boundaries of Boone, were in 1815. (For particulars in regard to "Early History" of this section, see chapter devoted to the subjects, in Book II. of this volume.)

Physical Features.—The northern portion of the county is generally undulating, and the southern principally broken. About three-fourths of the county is timber land, affording an abundant supply for all practical purposes. The principal streams in Boone are Cedar Creek, which forms its eastern boundary, Roche Percée, (Pierced Rock,) Little Bonne Femme, and their tributaries. Moniteau Creek forms the boundary between Boone and Howard.

Soil and Productions.—The soil of Boone is, much of it, of the bluff formation, and from an analysis made by Dr. Litton for the State Geological Report, is shown to be "the very best soil for wheat and rye in the State," and "well adapted to corn, tobacco, oats, and grasses." As the analysis proves the richest portions to be from ten to twelve inches below the surface, deep cultivation would be very advantageous. The adaptation of the soil to the production of various crops is shown by the following statistics of the yield of certain farms in the county: of wheat, 35 bushels to the acre; hemp, 1000 pounds; tobacco, 1000; corn, 100 bushels; rye, 20; oats, 40; buckwheat, 30; potatoes, 100; onions, 200; beets, 200; carrots, 200; turnips, 200; also, good yield of all kinds of fruit; timothy, clover, and Hungarian grasses. What are now considered as the poorest portions of the county, may ere long become the most productive, as the soils in those sections are well adapted to grape culture, which, with proper management, there is no more profitable or pleasant branch of husbandry.

Tax List of Boone County—1860.

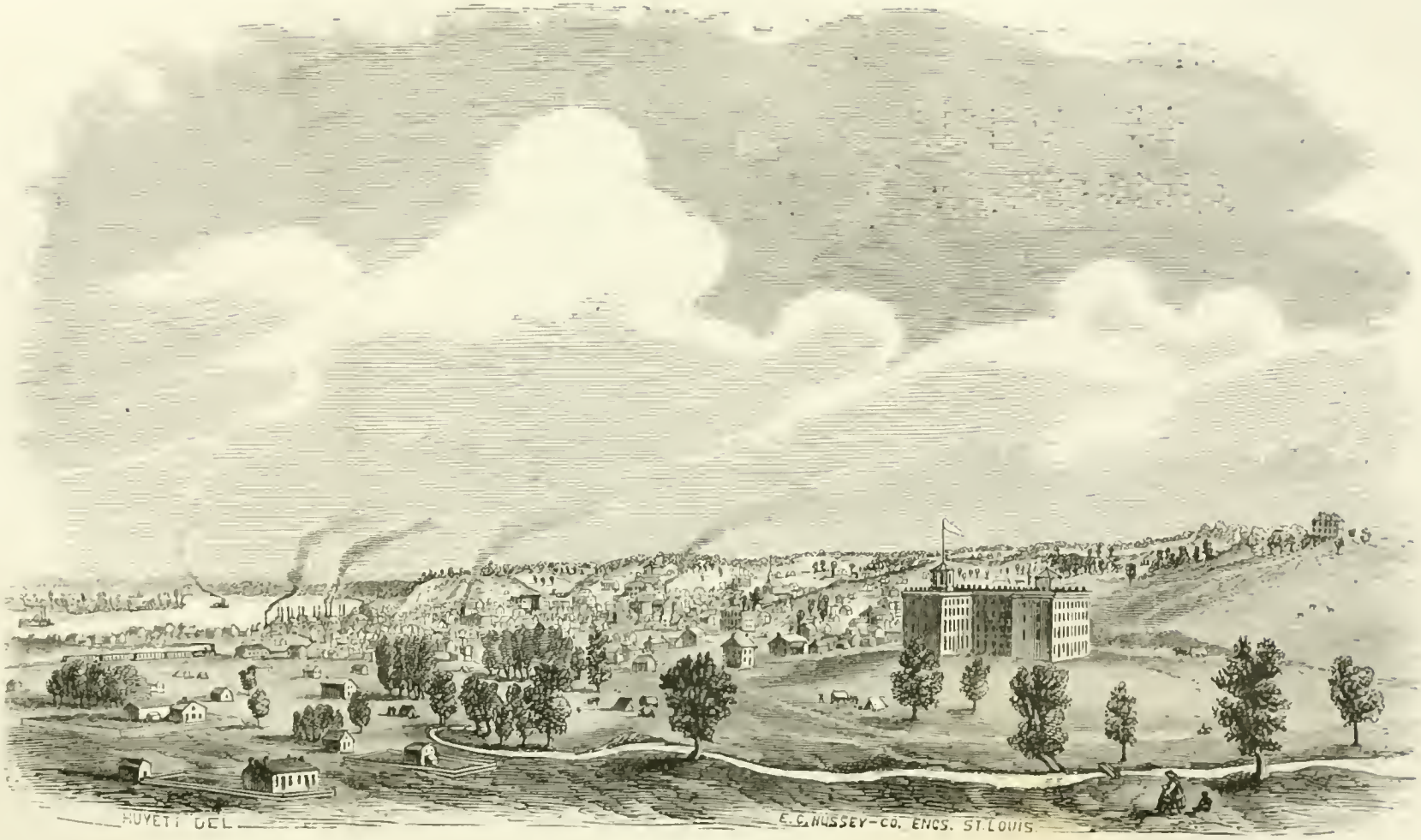
	NUMBER.	VALUATION.	STATE TAX.
Polls	2,475		$428 12
Acres of land	422,542	$2,760,874	5,521 74
Town lots	1,966	267,820	535 64
Slaves	4,338	1,697,610	3,395 22
Other personal property		679,236	1,358 47
Money		658,887	1,317 77
Total valuation		$6,064,427	
Total amount of State tax			$13,056 96
State interest fund tax			6,528 47
State lunatic asylum tax			1,088 05
County tax			13,056 96
Railroad tax			26,113 92
Total amount of taxes			$59,844 36

Business Statistics.—There are in Boone County of newspapers, three; banks, two; lawyers, ten; physicians, twelve; merchants, thirty-six; druggists, five; silversmiths, three; tinners, four; blacksmiths, twenty; wagon-makers, five; coopers, three; flouring-mills, nine; saw-mills, ten; tobacco manufacturers, four; carpenter shops, twelve; cabinet shops, three; shoe shops, six; tailors, 10; saddlers, four, etc.

Educational Institutions.—The "University of Missouri" is located in Columbia—has an endowment fund of $123,000, a library of 2000 volumes, a cabinet containing 120,000 specimens, and an edifice erected by private subscription of Boone, costing $85,000, under the management of a board of curators and a competent corps of teachers. The Baptist Female College and the Christian College are each well conducted and liberally patronized, and have the reputation of being very good schools. A college is about being established at Sturgeon with favorable prospects. Professor John Johnson has established a good school at Ashland, for males and females. There is also another fine school near Rocheport in a flourishing condition, under the supervision of Professor J. Newton Searcy.

Inducements to Immigration.—Boone County contains a good variety of soil, adapted to various agricultural purposes, an abundance of timber, inexhaustible beds of stone coal, the best schools in the State, and a moral, refined, and intelligent population. All practical, energetic men, of whatever trade or calling, who will assist in developing the resources of the county, will find in Boone locations and advantages worthy of their attention.

Natural Curiosities.—About seven miles from Columbia is "Connor's Cave," the entrance of which is twenty feet wide and eight feet



ST. JOSEPH, MO.

high, which is said to have been penetrated several miles. Above Rocheport, a short distance, are high cliffs of rocks containing Indian hieroglyphics, and numerous caves and springs.

COLUMBIA, the seat of justice, is situated near the center of the county, upon a high and beautifully-undulating site, with wide streets laid off at right angles, well shaded by forest trees and shrubbery, and graced by some excellent public buildings and residences. This place, in point of educational advantages, excels any other in the State, and has very appropriately been called the "Athens of Missouri." The State University, the Baptist College, and the Christian College are all located here, and each in a flourishing condition. In 1856 Columbia contained 1542 inhabitants—now estimated at 1750.

Rocheport is situated upon the Missouri River, and is the principal commercial town of the county. It is in the extreme southwestern corner of the county, and in 1852 was considered one of the most thrifty towns on the river for a number of miles. The citizens manifested much energy and public spirit by grading and Macadamizing the streets, paving sidewalks, etc. In 1856 this town contained a population of 507—now estimated at 550. The annual shipment of produce from this point is very large.

Sturgeon, a brisk new town on the North Missouri Railroad, incorporated March 14, 1859, contains 500 population. **Providence**, 100; **Centralia**, 25; **Ashland**, 50; **Middletown**, 30.

BUCHANAN COUNTY.

This county is situated in the west-northwest part of the State, is bounded on the east by Clinton and De Kalb, on the north by Andrew, on the west by the Missouri River, which separates it from Kansas, and on the south by Platte County, and has an area of 415 square miles. Population in 1860, 23,675.

Physical Features.—This county is principally made up of undulating prairie land, and its appearance by Eastern travelers has been compared to a "rough sea," so gentle are the slopes and undulations. There is a good growth of timber along the margins of the streams, and here and there fine groves upon the prairies.

The Soil is generally deep and remarkably fertile, producing all kinds of grains, grasses, fruit, and vegetables found in this latitude.

Some farmers have produced as high as 1500 pounds of hemp to the acre, 125 bushels of corn, and 30 bushels of wheat, 50 rye, 60 oats, etc., and fruit and root crops yield abundantly. The "Platte Country" has a world-wide fame for its fertility, and the deep soil but needs more farmers, and a thorough and systematic cultivation, to render it the best farming region of the State, if not in the Union.

Climate.—Situated in latitude 39° 30′ north, the climate at St. Joseph is healthy, salubrious, and free from miasmatic influences. The statistics show this to have been an exceedingly healthy country up to the present time.

Educational Institutions.—There are twenty schools of different grades in St. Joseph. Besides those supported by the common school fund, are the following private institutions: Convent of the Sacred Heart, St. Joseph College, Female Seminary, Male and Female Seminary, Male Academy, German and English School, and "Third Ward School." In 1858 there were in the county 5427 pupils, of whom 2119 were taught during the year at a cost of $7896 70, and the sum of $1133 50 raised to build and repair school-houses. School money apportioned for 1859, $4533 30.

Religious Denominations.—The following list embraces the church organizations in St. Joseph: Episcopal, Presbyterian O. S., Presbyterian N. S., Presbyterian Cumberland, Methodist Episcopal, English and German, Christian, Baptist, and Roman Catholic.

Benevolent Societies.—The Free and Accepted Masons, I. O. O. F., and Sons of Malta, have each one or more lodges in St. Joseph. The "Young Men's Literary Association" and the "St. Joseph Institute" are each in a prosperous condition.

Inducements to Immigration.—Farmers will find in this county prairie or timber, bottom or table-land very fertile, adapted to the growth of as great a variety of productions as any other part of the Union. In the varying qualities of the rich soil, and the equal temperature of the climate, they have all the desirable elements of agricultural wealth. For the production of cereals or grasses, root crops, fruit, or grape culture, the soil and climate will be found admirably adapted. Manufacturers will here find a wide field for the employment of their capital and energy. The extensive and increasing home demand for all articles of manufacture, together with the abundance of raw materials, point to St. Joseph as the natural location for a large manufacturing city. Now nearly every article in use bears the mark of foreign workshops: the farming implements, mill machinery, household furniture, woolen, and cotton fabrics, boots and shoes, and scores of other articles could be manu-

factured here to advantage, and thus support a large population, and add greatly to the revenue of the county and the State. Mechanics will see in the rapid growth of the city and country unmistakable evidences of the prosperity and success of every branch of their business; while capitalists will find rare opportunities for profitable investment, from which they can realize a handsome return, and at the same time contribute toward the development of the resources of this portion of our noble State.

Early Settlement of St. Joseph.—The first settlement made in the section of country now embraced in Buchanan County was by Joseph Rubidoux, senior, who first visited the spot now occupied by St. Joseph, during the year 1799. His connection with the American Fur Company induced him to locate here permanently, which he did in 1803, and for thirty-three years he remained as a trader among the Indians, upon their own soil. His lone cabin was located upon the most lovely spot of the beautiful "plain" upon which the City of St. Joseph now stands. In the selection of his building spot, he evinced the same shrewdness and good taste which has characterized the location of all the more intelligent and refined settlers throughout the West. The "plain" upon which St. Joseph is situated embraces an area of several miles in extent, surrounded by mound-shaped bluffs, so artistically arranged and so beautifully diversified in shape and size as to resemble more the work of art than that of nature. The most prominent of these bluffs is "King Hill," which has indications of having formerly been used as a place of burial by the Indians. Mr. Rubidoux's keen perception, and his knowledge of the character of the surrounding country, convinced him that this was a choice location, and as he viewed the adjacent territory and considered its central locality, and looked forward to what he deemed the future demands of the country, he was more and more pleased with the location he had selected. Eventually others came and settled thereabouts, but the immigration was limited until after the land was transferred to the United States Government, by the Iowa, Sac, and Fox Indians in 1836, by the articles of the "Platte Purchase." Soon the fame of the "Platte Country" spread far and wide, and scarce a day passed without the arrival of new-comers to make their homes upon the newly-acquired territory. In 1843, Mr. Rubidoux became the proprietor of the present site of the city—land which he had occupied for years; and to supply the imperative and increasing demands of the rapidly growing community, he proceeded to lay out a village, which is now shown on the large city map as the "Original Town." The new place increased rapidly in population

and importance, and in 1845 the town was chartered by the legislature. In 1846, the seat of justice was located at St. Joseph, and in 1853 the legislature granted her a city charter.

At the election for Clerk of Circuit Court, held the first Monday in August, 1840, there were 979 votes polled. William Fowler was elected Clerk and Recorder, and Samuel M. Gilmore, Sheriff. Honorable Austin A. King, had, in March, 1839, appointed Edwin A. Toole, Clerk of Circuit Court, and William Fowler, Clerk of County Court.

ST. JOSEPH, the county-seat and commercial emporium, contains about 13,000 inhabitants; **Easton**, 400; **De Kalb**, 500; **Columbus**, 150. The increase in voters from 1857 to 1858, in the City of St. Joseph, was nearly 50 per cent., and from 1858 to 1859, nearly 75 per cent. None are voters in St. Joseph until they have resided in the State a year and in the city six months; hence the growth may be considered as healthy and permanent.

Industrial Pursuits.—The following statistics were compiled with great care, by the publishers of the St. Joseph Daily Gazette, in January, 1860, and may be relied upon as correct. There are in St. Joseph—

	NUMBER OF HOUSES	AMOUNT OF BUSINESS IN 1859.
Grocery Stores	68	$1,348,900
Dry Goods	30	1,011,000
Hardware (exclusively)	3	165,000
Banking Houses	6	
Tin and Sheet-Iron Ware	6	88,000
Iron Store, (exclusively)	2	41,000
Drug Stores	6	186,000
Hatters	2	40,000
Leather Store, (exclusively)	1	40,000
Furniture Stores	5	40,000
Cabinetmakers	6	6,300
Saddlery	4	61,000
Upholsterers	2	5,000
Tobacconists	4	35,000
Boot and Shoe (exclusively)	11	67,000
Jewelry	8	84,000
Wagon and Carriage Manufactories	7	54,200
Match Factory	1	1,000
Marble Manufactories	2	9,000
Plow "	2	18,000
Auction Houses	6	
Liquor Stores (exclusively)	2	36,000
Soap Factory	1	26,000
Soda Water Factory	1	4,500
Livery Stables	9 Capital, $80,000	54,000

Foundery	1	Using 60 tons iron.
Woolen Factory	1	Manfactured and fulled 40,000 yards cloth last season.
Brick Yards	12	Manufactured 11,800,000.
Pork Packers	3	Head packed, 18,700.
Flouring-mills (am't invested $90,000)	3	Flour manufactured, 20,000 bbls.
Hemp Houses	5	Purchased and shipped 2,400 tons.
Saw-mills	4	Turning out 4,100,000 feet.
Breweries, (Capital, $40,000.)	6	Beer manufactured, 7,820 bbls.
Newspapers	5	Daily three.

Besides the above, there are—

Medical Journal	1	Billiard Saloons	5
Churches	9	Blacksmith Shops	14
Schools	9	Steam Planing-mill	1
Convent	1	Job Printing Offices	6
Queensware Store	1	Lumber Yards	9
Hotels and Taverns	22	Lawyers in City	41
Saloons	78	Tailors	8
Daguerreian Galleries	5	Millinery Establishments	10
Steamboats arrived last season	410	Restaurants	7
News and Paper Stores	2	Bakeries	15
Hands in the various manufact's	347		

The aggregate wealth of 200 citizens (owning $10,000 worth and upward) amounts to $4,896,945. Of these, the following own over $100,000 worth each:—

Powel & Levy	$109,000	John Corby	$250,000
John Patee	250,000	W. M. Carter	100,700
A. Beattie & Co	122,000	F. W. Smith	250,000
Tootles & Farleigh	100,000		

Of Hotels, there are ten in St. Joseph, and a creditable number in the other towns of the county. The Patee House, situated near the Hannibal and St. Joseph Railroad depot, contains 265 rooms, with all the modern improvements and conveniences, hot and cold baths, gas-lights, etc. The dimensions of the house are 140 by 148 feet, four stories high, with a court-yard 60 by 104. Everything in and about the house is complete, elegant, and well arranged. The building and furnishing cost about $140,000, and is a substantial monument to the energy and public spirited enterprise of John Patee, Esq., the builder and owner. It was formally opened to the public in November, 1859. The St. Joseph Hotel is being built by a stock company, and will be completed and opened during the summer of 1860. It is a large, well-built brick building, five stories high—a commodious and elegant structure. Besides these, are Allen's Hotel, Blakemore House,

Planter's, City, and Missouri Hotels, all of which are good places for the traveler to sojourn.

Trade and Commerce.—The commercial position of St. Joseph is peculiarly advantageous: being the western terminus of the most northerly, direct, through railroad route to the Eastern cities, makes her the entrepot for the shipment of produce, peltries, and furs, from a section of country traversed by the navigable Missouri for 2000 miles to the northwest; of the immense trade of the fertile region of Northern Kansas and Southern Nebraska, that reaches the river at the thrifty and pleasant new town of Bellemont, (five miles west,) thence to St. Joseph by a steam ferry-boat; of the trade of the Platte country, and of Southern Iowa, that shall center here *via* the St. Joseph and Atchison Railroad, just completed, and the Platte Country Railroad now building, together with the receipt and shipment of supplies for all the region of country above named, that will reach St. Joseph by river and railroad from the East and South, contribute to render this one of the most important commercial cities on the Missouri.

BUTLER COUNTY.

This county is situated in the southeast portion of the State, bounded on the east by Stoddard and Dunklin, west by Ripley and Carter, north by Wayne, and south by the Arkansas State line. This county was organized February 27, 1849, and when the census of 1850 was taken, contained but 1616 population, and only 143 farms were at that time occupied. The largest crop produced from the 5000 acres then under cultivation was Indian corn, of which 55,800 bushels were returned. Although a portion of this county is the best of meadow land, but seven tons of hay were produced in 1850. It now, 1860, contains 2148 inhabitants.

This county embraces about 350,000 acres of land, of which 100,000 are free from inundation and very fertile—250,000 having been returned as swamp lands, but can be principally reclaimed by drains and levees.

By an act of Legislature, session of 1852–53, these lands were granted to the county for the purpose of their reclamation, with provision for the appropriation of a portion of their proceeds to the advancement of education. These 250,000 acres, at an average value of $2 50, will bring $625,000, which would enable this county to con-

tribute liberally toward the construction of the railroads projected through that region, and also to provide for the education of present and future generations on a liberal scale. Unsold school lands in the county, 12,000 acres.

The south half of Butler County is frequently overflowed, which, until drained, renders it unfit for permanent improvement, unless it be for cranberry culture, in which, if properly managed, any farmer could realize a handsome fortune, provided the climate is suitable, which has by some been a matter of doubt. The cranberry is a hardy plant, and the fruit is always in demand at a fair price, and the cheap and otherwise worthless lands in the southeast corner of the State are said to be the proper soil for them, and it would cost but a trifle to test the matter, which, if successful, would prove a great source of profit to hundreds of individuals, and add very materially to the revenue of the State.

It may be proper here to correct an erroneous impression in regard to the location of Chalk Bluffs, generally spoken of as in this State. They are on the bank of the St. François, in Greene County, Arkansas, on the extreme northeast boundary of Crowley's Ridge, and very near the State line. The name is derived from the pure white appearance of the potter's clay, of which the banks are composed; which, however, in some strata are beautifully variegated with flesh tints, and others cream colored. Professor Owen, State Geologist of Arkansas, says he has manufactured small crucibles from this clay, and that it produces an excellent and strong article, and will resist sudden changes of temperature without breaking.

Of timber, the growth of the high ground is principally black and white oak; in the bottoms a mixed growth. Groves of cypress timber flourish in the bottoms of the St. François, a short distance above Chalk Bluffs.

A little south of the State line, one mile south of "the Pine," and between the Gainesville and the Pocahontas Roads, about township 21 north, range 8 east, near the bottom of a hollow where a spring branch takes its rise, on the north side of the ridge, and about four miles from Levi Boyd's farm, is a large bed of yellow ochre, which has been used successfully by the inhabitants to color woolen goods, and is said to have a better body and clearer color than French spruce yellow for brick work, and outside work on buildings.

Mr. F. R. Brunôt, a heavy iron manufacturer in Pittsburg, has purchased large tracts of iron and timber land in the northeast corner of this county, at Indian Ford, on the St. François River, for the purpose of establishing extensive iron works, when the comple-

tion of the railroads now in course of construction shall afford him an outlet. This bank of ore is on the last bluff before entering the swamp region going east.

POPLAR BLUFFS, the county-seat, is located on section 3, township 24, range 6 east, and contains about 200 population, with a fair number and variety of business houses. Miller's steam flouring and saw-mill does an extensive business, and is the most important manufactory in this section. A new court-house, costing $10,000, is being erected. This town has about 200 inhabitants, is situated upon the last high lands on the west side of Black River, and obtained its name from the fact that a large cabin, built of poplar poles and covered with poplar bark, occupied this site for more than thirty years, and had become a general rendezvous and store-house for the large numbers of hunters who annually visit the bottom lands adjacent. It is located at the head of navigation on Big Black River, and considerable lumber is shipped from this point. An $80,000 contract has been let for improving the navigation of the river, and a boat built at Pittsburg to run in the trade, which, besides the usual machinery, has an extra engine and apparatus for removing snags and other obstructions.

A large colony of Danes are settling near Poplar Bluffs, upon two townships of land in a body, and upwards of one hundred families are expected to arrive this season. The immigration into the county is very great, and the next census will show a very favorable condition, both as respects the population and products of the county.

At no distant day the Iron Mountain Railroad must be carried through to Memphis; and as it will then be the great north and south thoroughfare, Poplar Bluffs will become a place of considerable commercial importance.

CALDWELL COUNTY.

This county is about the center of the northwest quarter of the State, and embraces twelve townships. It was first settled by the Mormons in 1835, and in 1840 contained a population of 1458; in 1850, 2317; and in 1860, 5166.

Physical Features.—The face of the country is undulating, principally prairie, with an abundance of timber in groves and along the water-courses. The soil is very fertile and well adapted to farming or grazing; embracing extensive natural meadows, an abundance of good stock water, and a deep lasting soil that produces all kinds of

grain and fruit that grow in this climate, with but very little waste land in the county. The average yield of farm products are: wheat, 42 bushels; rye, 25; corn, 100; oats, 60; buckwheat, 50; potatoes, 200; turnips, 300 bushels; onions, beets, and carrots do well; hemp, 1000 pounds; tobacco, 1200; timothy, 4 tons; Hungarian grass, 4 tons; and all kinds of fruit and berries yield well. The timber usually found in this and adjoining counties consist of the oaks, walnut, maples, cottonwood, hickory, elm, hackberry, ash, lime, mulberry, locust, etc. Unimproved lands can be had at from $2 50 to $20 an acre, and improved at from $5 to $30—generally from $8 to $15—depending upon location and improvements. For manufacturing purposes, there is good water power on Shoal, Log, and Brush Creeks, and Crooked Run; unimproved, excepting on Shoal Creek.

Business Statistics.—There are in the county, 8 merchants, 6 hotels, 1 grocer, 4 lawyers, 9 physicians, 1 druggist, 1 silversmith, 1 tinner, 8 blacksmiths, 4 wagon-makers, 2 saddlers, 1 tailor, 3 shoemakers, 1 cabinetmaker, 30 carpenters; no newspapers or banks. Of manufactories, there are 5 flouring-mills; 3 by steam and 2 by water power.

Churches and Schools.—Of churches there are in the county: 2 O. S. Presbyterian, 1 N. S. Presbyterian, 2 Methodist, 3 Baptist, and 2 Christian. There are 27 district schools, which are kept open during most of the year. No colleges, academies, or schools of a high order.

Inducements to Immigration.—Our informant, C. J. Hughes, Esq., represents the character of the people as of "a highly moral and intelligent caste, and the moral tone of society of the purest kind, while the body of the people are industrious and enterprising." The inducements offered are, "for mechanics and laborers, high wages and ready pay, and good demand for labor; for merchants, ready sales, fair prices, and prompt payment; for capitalists, fine investments in property and fair rates of interest, and debts surely and promptly met; for farmers, a rich soil, healthy climate, ready market, high prices, and good facilities for marketing."

The principal towns are **KINGSTON**, the county-seat; population 200.

Breckenridge, on the Hannibal and St. Joseph Railroad, 16 miles northeast from county-seat; population 175.

Hamilton, on the Hannibal and St. Joseph Railroad, 8 miles from county-seat; population 120.

Mirabile, 6 miles west from Kingston; population 160. Kingston

is 165 miles from Jefferson City, 260 by railroad from St. Louis, and 50 from St. Joseph. It was incorporated November 21, 1857. An opening for a good hotel will be found at Hamilton, which is a brisk new town with fair prospects.

CALLAWAY COUNTY.

This county is situated in the east central part of the State, bounded on the east by Montgomery, (from which it was formed,) on the north by Audrain, on the west by Boone County, and on the south by the Missouri River, which separates it from Osage and Cole Counties; was organized in 1820, and in 1824 contained 2455 inhabitants; in 1830, 6159; in 1840, it had increased to 11,765; in 1850, to 13,828; in 1856, to 15,906, it being at that time the fifth county in the State in point of population; and in 1860, to 17,773.

History.—This county was settled by Captain Samuel Boone, (nephew of Daniel Boone, of Kentucky,) in 1818. At that time it was "Montgomery," which was a territorial county and reached from St. Charles County to Howard County, and in 1820 Callaway County was formed; but its limits have since been reduced by the formation of adjoining counties, partly from its original territory. When Captain Boone first settled here, his nearest neighbor was Isaac Vanbibber, who lived eight miles distant. Mrs. Vanbibber was a granddaughter of Colonel Daniel Boone, and was the first white child born in Kentucky—her parents at the time resided at Boonsborough, (in 1776.) Colonel Boone and Mr. Vanbibber came from Kentucky with their families in 1799, and in the fall of 1820 Colonel Daniel Boone died without ever having returned to Kentucky. This fact is mentioned (says our informant, Captain Samuel Boone,) because there has been some dispute among historians about his return to Kentucky; but Captain Boone says he is certain he did not leave Missouri after he came here in 1799. This county was named in honor of Captain James Callaway, who commanded a company of Rangers, and who perished in defending the country of his adoption from the outrages and depredations of the numerous tribes of savages which at that day inhabited this region.

Physical Features.—The surface of this county along the river is level and fertile, the northern portion being broken and hilly, extending out upon the ridge which divides the waters of the Mississippi from those of the Missouri. The county is drained by Cedar Creek,

the Muddy, and the sources and small tributaries of Loutre Creek. About one-third of the county is prairie.

Minerals.—Beds of bituminous coal underlie the county, estimated to be twenty-four feet thick in some places; iron ore, marble, fine limestone, potter's clay, and extensive banks of cannel coal are found in the county—all in working quantities. In 1848 a bank or extensive strata of marble was found, which was at the time pronounced superior to any elsewhere found in the United States, and inferior to none but Italian. "It is compact, fine grained, and exhibits a very minute crystalline structure, with its fracture conchoidal. It is of a light cream color and handsomely variegated." This is situated about six miles from Fulton; and iron ore, hydraulic cement, and stone coal are said to exist upon the same section of land.

Soil and Productions.—This county embraces a great variety of soil, from that of the alluvial bottoms to the high gravelly ridges, and is adapted to the various purposes of agriculture, stock growing, and fruit culture. After giving an analysis of a magnesian limestone soil, from the southern bluffs of the county, the State Geologist remarks: "This soil is all that could be desired for the culture of the grape. It contains an abundance of all the mineral substances which enter into the composition of the vine, as shown above by its analysis. While it is *warm*, *light*, and *dry*, it contains large quantities of *magnesia* and *vegetable matter* or *humus*, giving it great capacity for absorbing and retaining a sufficient quantity of moisture, even in the droughts of summer." According to the census of 1850 (the latest data upon the subject) this county produced 184,418 of oats, the largest yield produced in the State, excepting that of Greene; and in the production of hay it was exceeded only by Howard.

Taxable Property in Callaway County—1860.

Polls	2,347
Acres land, 463,380, valued at	$2,307,089
Town lots, 958	259,480
Slaves, 4360	1,689,592
Personal property	655,373
Money	1,051,417
Total valuation	$5,958,951
State tax	12,798 02
County tax	8,531 99
Mill tax	5,958 94
Asylum tax	893 15
County-road tax	2,101 73
Total taxes	$30,283 83

FULTON, the county-seat, has a pleasant and healthy situation, surrounded by an excellent farming district well settled by intelligent and industrious citizens. The town was laid out about 1822 or 1823, and in 1836 was considered as one of the most flourishing towns in the interior of the State of its age, as will be inferred from the number and character of the religious and educational institutions located here. The people are refined and hospitable, and the society excellent.

There are four churches in Fulton: one each of the Presbyterian, Methodist, Baptist, and Christian denominations. The Westminster College, under the auspices of the Presbyterian Church, with an endowment of $100,000; also Fulton Female Seminary, established some years since upon a permanent basis; the Floral Hill Female Seminary, recently commenced, and in a promising condition, and an excellent common school, all ably conducted and liberally patronized. The State Institution for the education of the deaf and dumb, and the State Lunatic Asylum are both located here. The latter is a beautiful edifice 210 feet long, five stories high, and contains 112 rooms. The people of the county contributed $12,000 and 460 acres of land toward establishing the institution here.

Of business houses there are 2 banks, 1 newspaper office, 1 woolen manufactory, 1 earthenware manufactory, 2 steam flouring-mills, 4 saw-mills, and a good average of mechanics, merchants, and professional men. Though situated away from river and railroad, Fulton is not isolated, there being six stage routes from the place, viz., to Jefferson City, 24 miles; St. Aubert Station, on Pacific Railroad, 15 miles; Florence or Montgomery, on North Missouri Railroad, (daily) 27 miles; Paris, 50 miles; Portland, on Missouri River, 14 miles; Columbia, Boone County, 25 miles. Fulton was chartered as a city, March 14, 1859, and contains about 2000 population.

Portland is situated on the Missouri River, 141 miles above St. Louis, and is a shipping point for a considerable extent of country. This town was first settled about the year 1833; population about 300. The manufacture of tobacco is the principal business of the place.

Concord, 12 miles from Fulton, contains a Presbyterian Church, Masonic Lodge, and several business houses; population 150.

Williamsburgh, population 100.

Cote Sans Dessein, (a hill without a design,) is a small village situated three miles below the mouth of the Osage River. It was first settled by French in 1808, and was once a populous place. Its name is derived from an isolated hill, some 600 yards long and very narrow, filled with limestone, standing in the bottom on the bank of the river; and it is thought by many that some convulsion of nature has separated

it from the Osage bluffs opposite, and turned the Missouri River between this hill and the base of its kindred bluffs. Cote Sans Dessein was the scene of some hard-fought battles with the Indians, in which were exhibited instances of woman's bravery and determination truly commendable and wonderful.

CAMDEN COUNTY.

This county is situated in the south central part of the State, bounded on the north by Morgan and Miller, south by Dallas and Laclede, east by Miller and Pulaski, and west by Benton and Hickory Counties; and contains an area of about 680 square miles. The population of the county in 1850 was 2338, and in 1856 was reported at 3287, the latter being claimed by the citizens to be erroneous; in 1860, 4845.

Physical Features.—The face of the country rolling, and some portions broken, and well timbered, except in the extreme southeastern corner. There is but little prairie in the county. It is drained by the Osage, Big and Little Niangua, and Grand Auglaize Rivers, the former of which is navigable for small steamboats. A correspondent of the Missouri Republican says: "Camden is made up of a succession of hills, valleys, and beautiful woodlands. Her soil is rich and productive; and here you might literally see 'her cattle feeding upon a thousand hills.' The hills of the Big and Little Niangua are picturesque and sublime, while the water power of these streams, together with their fine forests of oak, walnut, cherry, and a variety of other timber, are objects of great interest to mechanics and machinists. A single spring on Big Niangua furnishes water enough for any amount of machinery; and the scenery that surrounds it is the admiration of all who see it. Many have traveled miles to see nature's wonder; and, like the queen who visited Solomon, involuntarily exclaimed, 'the half had never been told.'"

The Wet Auglaize, in the southeastern part of the county, meanders through it for fifteen miles, and the two Niangua Rivers, conjointly, forty miles. These streams afford good water power, which has been partially improved. Good flouring and saw mills, carding machines, etc., would pay well upon the capital invested. Lower Big Spring, and the Big Cave, in township 73, range 17, are points of considerable interest. There are a number of large springs of pure cool water throughout the county. As prairie grass of natural

growth is abundant from April to November, stock growing would also prove profitable.

Soil and Productions.—Some parts of the county are very fertile, and better suited to agriculture, others broken, but well adapted to fruit and stock growing. The principal products are wheat, corn, rye, oats, timothy, and tobacco.

Minerals.—In 1846, Captain W. D. Murphy discovered lead ore in township 39, range 17, section 36, when he at once erected a furnace, and during the year, 100,000 pounds of mineral were taken out; at that time mineral was worth $20 per 1000 pounds, and lead, at St. Louis, sold for $5 per hundred pounds. In 1847, the mine was abandoned—not on account of any decrease in the mineral product, but because, as Captain Murphy states, he "had too many irons in the fire;" he being at that time in the mercantile business, and the owner of two steamboats, allowed the lead mine to remain unworked, as it is at the present day. No lead mines are now worked in the vicinity of Linn Creek, though the mineral is there, and in paying quantities.

Industrial Pursuits.—There are in the county, newspaper, 1; merchants, 8; lawyers, 5; physicians, 7; druggists, 2; grocers, 2; carpenters, 10; blacksmiths, 10; wagon shops, 5; coopers, 4; saddler, 1; tailors and dealers, 3; shoemakers, 2; saw-mills, 3; flouring-mills, 2; teachers, 6; hotels, 3; stove and tin shops, 2; surveyors, 2; brick-masons, 3; distillery, 1; brewery, 1; hide and leather dealers, 2; beef and pork packer, 1; and warehouses, 4.

Of churches, there are 12: Methodist, 5, 200 members; Baptist, 5, 80 members; Campbellites, 2, 80 members. Of district schools there are about 20, principally in southeast part of the county. Recently, the citizens of Auglaize got up a subscription for building a high-school house, and selected a beautiful site, near five never-failing springs of clear water. There will also be a town laid off adjoining, to be christened "Glaize City." It is a central point, and eighteen miles distant from any town. The selection for the town and school is altogether a good one—no better could be found in the State—on the Osage, about eighteen miles from Linn Creek.

LINN CREEK, the county-seat, is located in section 36, township 39, range 17 west—situated on Linn Creek, about one mile from the Osage River, and is an important center for business, for Southwest Missouri and Northwest Arkansas. The amount of goods annually sold at this point is estimated to be not less than three-quarters of a million of dollars' worth, and the amount imported from other points, shipped to this place, not less than $2,000,000. The house of McClurg,

Murphy & Co. sell, upon an average, half a million dollars' worth of goods annually. The Osage is navigable for steamboats the greater portion of the year—the round trip being made to the mouth of the Osage River in a week or ten days, where the goods and produce are usually reshipped upon the Pacific Railroad to St. Louis. The "Big Niangua Spring," so noted as being the rendezvous of a large band of counterfeiters in 1833–34, is situated about eight miles from Linn Creek. Population of Linn Creek about 300.

Cave Pump is on the Big Niangua, six miles from the county-seat.

Toronto, sixteen miles east from Linn Creek, was first settled in 1832.

CAPE GIRARDEAU COUNTY.

This county is situated in the southeast portion of the State, bounded on the east by the Mississippi River, on the west by Bollinger, on the north by Perry, and on the south by Scott and Stoddard Counties, and embraces an area of 875 square miles.

History.—The first settlement at Cape Girardeau was made by Louis Lorimer, a Frenchman, in 1794, who erected what Marie Philip Le Duc called "large buildings," in 1799. He petitioned the Governor-General of Louisiana, El Baron de Carondelet, (September 1, 1795,) to grant him 8000 arpents of land. The Governor-General, under date of New Orleans, October 26, 1795, directed Surveyor-General Soulard to survey said land. In 1810, Surveyor Soulard testified that "Cape Girardeau" was situated upon the land claimed by said Lorimer. Robert Gibany established a blacksmith shop here in the fall of 1797. Randol settled a few miles from the town in 1798. His son John (then a boy of fourteen) still resides in the county, and is an active, industrious man. He says the old English mode of plowing was practiced in those days by Lorimer, (above named,) who was very wealthy, and had a large number of negroes: one negro led the horse, while another held the plow. Urban Asherbrauner located here in 1800. Solomon Thorn and Andrew Ramsey each came in 1801, cleared land, cultivated nurseries, and planted orchards and gardens. Thompson Bird, in 1801, cultivated corn, vines, and tobacco. Dennis Sullivan came in 1802, blacksmithed two years, and taught school for some years afterward on Bird's Creek. Joseph Crutchlon settled at Alexander Parish, in 1802, and planted large crops. Geo. F. Bollinger (son of John Bollinger) settled on

White Water in 1803. The government and administration of the laws was altogether in the hands of the Commandante. He settled all disputes as to property, and enforced the collection of debts in a summary mode.

Probably the first flax raised in the State was by James Boyd, near Cape Girardeau, who raised and worked it in 1804. Some of the descendants of the above named are among the most worthy, able, valuable citizens of this section of country. Missouri Territory was formerly divided into seven districts, namely: The Arkansas, St. François, Cape Girardeau, St. Genevieve, St. Louis, and St. Charles. The Cape Girardeau district extended from Apple Creek to the Tywappaty Bottoms, about thirty miles. (See "Outline History.")

At the close of the year 1799, the Lieutenant-Governor of Upper Louisiana had a census taken, at which time this district contained 521 souls. In 1803 the population had increased to 1206; in 1804 to 1500, and the census of 1810 shows a population of 3888. At this time there were twenty buildings in the town, a saw and grist mill, a few artisans, and several stores. Excepting three or four French families, these were all immigrants from the United States; and soon after the United States took possession of the Territory, the men were formed into three large military companies.

The Indian villages—two of Shawnees and one of Delawares—were erected in the year 1794, on Apple Creek, about twenty miles above its mouth, which is eighteen miles above Cape Girardeau. The Indians in these villages were considered the most wealthy in the country, and had built their towns under the sanction of the Spanish, who were very friendly toward them, in hope to secure their protection in case of an attack from other tribes. One of these little towns in 1811 contained eighty houses, principally hewn log cabins, covered with shingles, and comfortably furnished.

In his "Emigrant's Guide," published 1818, William Darby, Esq., says of this district: "This is one of the most flourishing settlements on the western waters of the United States. The lands are various and good. The staples are cotton, flour, tobacco, hemp, and maple sugar. Maize is raised for home consumption, but is frequently exported to Natchez and New Orleans. Beef, pork, lard, and tallow are also produced for consumption and exportation." At the date the above statement was made, (1818,) settlements were scattered through the district, even as far west as the St. François, sixty miles from the Cape. In September, 1821, the population of this county was 8352, of whom 1432 were slaves, and 44 free blacks. From 1830

to the present time the population is given of all the counties, in the table at the close of the Outline History. In 1860 there were 12,734 whites, 66 free colored, and 1533 slaves.

Physical Features, Soil, etc.—The southern part of the county is mostly level, the other portions present a moderately-uneven surface, very little more than enough to insure good drainage, unless it be in the first range of hills adjacent to the Mississippi River in the northeastern part of the county, some of which are abrupt. It is a heavily-timbered county, (there is no prairie,) comprising in the different sections, poplar, ash, sugar maple, cherry, elm, beech, and the different varieties of walnut, hickory, oak, etc., in great abundance. Boat-builders who have examined the fine oak and poplar timber near Cape Girardeau City, say it is the best in the valley of the Mississippi for boat-building purposes.

The traveler interested in the topography of the country will observe that the bluffs twelve miles below Cape Girardeau are the first that occur on the west side of the river above the mouth of the Mississippi; hence the left bank of the river, from these bluffs to its mouth, a distance of 1136 miles, has generally a low, alluvial shore. This has been stated by other writers as being the eastern portion of the dividing ridge or high lands between the waters of the Arkansas, White, and St. François Rivers, as well as those of the Mississippi and Missouri. That statement is erroneous, for this prominence is little else than an elevated island, and what is known as the East Swamp extends out from the Mississippi three miles below Cape Girardeau, and is about three miles in width, and forms the low lands of White Water, Little River, etc. The dividing line between Cape Girardeau and Scott passes through the center of this low land, which, though called a swamp, is susceptible of cultivation for several miles down the river from its northern limit, and a portion of these alluvial low lands are now very profitably cultivated.

The soil is very fertile, and produces an abundant yield of corn, wheat, oats, the different grasses, and tobacco. Many years ago flax and cotton were raised for home consumption, and some little flax is still raised; but the culture of cotton has been abandoned. There is no hemp raised in this county. The different varieties of fruits and vegetables are cultivated with profit, and to a largely-increased extent within the last five years.

The county is well supplied with water, having many clear, pure springs, and is drained by White Water, Apple Creek, and numerous other smaller streams. There are many fine mill sites on some of the above-mentioned streams, two or three of which are occupied, on

White Water and Apple Creek, by large grist, flouring, and saw mills, and there are others on the smaller streams. There are some twelve or fourteen saw-mills in the county, most of which are run by steam power.

Marbles.—Cape Girardeau is called the "Marble City," from the fact that it is built upon a solid bed of marble, so abundant and easily procured that it is used for paving. The State Capitol of Louisiana and some very fine blocks in St. Louis are constructed from it. The light marble is very compact and hard; does not crack from the action of frost upon it, and is within one per cent. of pure lime. Besides this, there are of variegated marbles, the white and black, the purple, red, and white, and the yellow and white, all susceptible of a fine polish. These marbles are all convenient to the city. Brown sandstone, beautifully stratified, and easily quarried and dressed, and which hardens upon exposure to the atmosphere, is abundant near the city, and used for building, paving, etc., as well as the marbles. The beautiful white sand found here is shipped to Pittsburg, Philadelphia, and Boston, for manufacturing the clearest glassware.

Industrial Pursuits.—The following list embraces the different classes of business represented in this county, and are principally in the City of Cape Girardeau: newspapers, 2; bookstore, 1; lawyers, 12; physicians, 16; dentist, 1; surveyor, 1; branch of Bank of State of Missouri, 1; dry goods merchants, 20; family groceries, 5; druggists, 6; hardware stores, 3; clothing stores, 2; tailors, 8; stove and tinware stores, 2; rope manufactory, 1; woolen manufactory, 1; marble, (one extensive steam power,) 2; distillery, 1; breweries, 2; soap and candle manufactory, 1; tanneries, 3; broom manufactories, 2; bakeries, 2; confectioneries, 3; boot and shoe manufactories, 8; saddleries, 3; saw-mills, 3; flouring-mills, 2; carpenter shops, 10; cabinet shops, 3; jeweler shops, 2; cooper shops, 10; blacksmith, 13; wagon, 12; tin, 2; painters, 3; hotels, 6; (the Johnson House a first-class hotel, and desirable place to sojourn;) livery stables, 5; brickyards, 3; masons and plasterers, 12. Also, a very extensive lime-kiln, on the most approved plan.

Churches and Schools.—The Catholics have at Cape Girardeau a college, theological seminary, and convent—well conducted and liberally patronized—substantial brick edifices located on beautiful, commanding sites. There are also in the city a Protestant female seminary, male academy, and a number of common schools, (of which there are fifty-three in the county.)

Cape Girardeau, the commercial city, and most important place in the county, is located upon a commanding site, overlooking

the Mississippi River, with a thrifty and intelligent population, good churches and schools, and neat and commodious business houses and residences. The best private residences are in the outskirts of the town, and the few old French buildings, valued by some for their antiquity and past history, add nothing to the beauty of the place. The whole city is underlaid by a solid bed of marble, which extends some distance northwest from the town. This place, in 1850, had a population of only about 800, which has within ten years increased to 3000. It is located 130 miles below St. Louis, and fifty above the mouth of the Ohio. Two newspapers are published here: the "Eagle," Ben. F. Herr and M. H. Moore, editors, in its fifteenth volume; and the Southeastern Democrat, Jas. T. Coleman, editor, fourth volume.

Did our limits permit, we should like to speak of the manufactories of this city—the extensive flouring-mills, steam marble works, the perpetual lime-kiln, where 1200 barrels per week of "Richard's Cape Lime" are manufactured, etc. etc.

JACKSON, the county-seat, is situated in the central part of the county, and was incorporated March 2, 1859. It is a brisk and flourishing place, surrounded by a beautiful and healthy country, and populated by a refined, intelligent, and hospitable people.

Within a few years past the people of this county have become aroused to the importance of internal improvements for the proper development of their natural resources. A gravel road has been built from Cape Girardeau to Jackson, and thence to White Water, and will soon be completed to Dallas, in Bollinger County. Another one is begun in the direction of Bloomfield, ten miles of which are nearly completed; and another one is about being commenced, and will soon be built to Appleton, in the northern part of the county, a distance of twenty-five or thirty miles. There is also a manifest determination on the part of the people to have a railroad from the Pilot Knob to Cape Girardeau, thence to Belmont, opposite Columbus, Kentucky, and there connect with the Southern system of railroads. This county is increasing in population and wealth very rapidly, and a greatly improved mode of agriculture, building, and living is apparent throughout the county within a few years past.

CARROLL COUNTY.

This county is situated on the north bank of the Missouri River, in the north central part of the State, bounded on the southeast by the Missouri River, on the east by Grand River, on the north by Livingston County, on the west by Ray County, and embraces about 800 square miles.

This county was formed from the territory of Ray County, about thirty years ago. In 1840 it had a population of 2483, and in 1850, 5448. The population in 1860 was 8831.

The general character of the county is undulating or rolling, not very fertile, with a good supply of timber land for all practical purposes. This may be considered partially a prairie county. The prairies are surrounded by timber, consisting of black oak, white oak, black walnut, sugar-tree, maple, linn, elm, hickory, hackberry, cottonwood, etc. The county is well watered by Grand River, which marks its eastern boundary, also by the Waconda, Big Creek, and their tributaries. Waconda empties into the Missouri five miles above the mouth of Grand River. Above Waconda is situated the Yellow Rock Prairie; noted for its beauty and fertility. Extending along the bank of the Missouri, between Waconda and Crooked Creek, is a sugar-tree bottom, which is remarkably fertile, but the location has been considered unhealthy. It is some thirty miles long, by from five to seven in width. Hemp or corn would produce well here. Almost every variety of location, bluff or valley, timber or prairie, can be found in this county, and many beautiful locations for large stock farms, for which the climate and location render Carroll peculiarly well adapted. The soil is generally favorable to the cultivation of all kinds of grain, grasses, fruit, and root crops that flourish in this latitude. Cultivated land is worth from $10 to $25, and uncultivated from $4 to $10 per acre.

Minerals.—Stone coal is abundant. Lead ore has been found in various localities, also some pieces of iron ore; but no systematic prospecting done. Extensive quarries of stone exist in the county, which furnish excellent grindstones, and also good rock for building purposes.

Antiquities.—There are in this county several very high mounds, rising from one hundred to four hundred and fifty feet above the level of the surrounding country. Bogart's is the highest; the next highest

is Stokes's; then Potato-hill Mound, etc. Out of Bogart's Mound (situated a little way north of the center of the county) there runs a very peculiar kind of spring, the water of which is oily or pitchy—so much so that the people in the vicinity use it for lubrication. These mounds occur repeatedly, and cover an area of some eight or ten miles. The pioneer settlers state that lead was found in considerable quantities in some of these mounds, but no mines have ever been opened, and none found that would pay for working. Indications of lead are found in the northwest part of the county. De Witt was doubtless inhabited, at one time, by aborigines, and the mounds standing on the elevation above, near Skelly's residence, appear to have been their works for defense; and about 600 yards above, on the highest ground, is a high mound which was probably their watch-tower, where the wary sentinel stood through the long hours of night, to watch the approach of the enemy.

Churches and Schools.—There are but few good church edifices in the county, but the following denominations have meetings: Cumberland and O. S. Presbyterians, New School Presbyterians, and Methodist Christian. Of free schools there are about fifty in the county—the districts being about three miles square. There will be a school fund of over $300,000 arising from the sale of lands that were given to the county. The amount apportioned by the State for 1859 was $2387 40, and the number of pupils entitled to the advantages of district schools, 3340.

The following industrial pursuits are represented in this county: Of lawyers there are 7; physicians, 16; merchants, 19; grocer, 1; druggist, 1; silversmith, 1; tinner, 1; blacksmiths, 20; wagon-makers, 10; saddlers, 4; tailors, 3; shoemakers, 3; cabinetmakers, 2; carpenters, 50; tobacco manufacturers, 1; saw-mills, (steam and water power,) 10; flouring-mills, (six steam, and two water power,) 8; wind-mill, 1; coopers, 3; hotels, 4; and 1 newspaper. Capitalists are badly needed. A banker or broker would find this a good point for business.

CARROLLTON, the county-seat, was named in honor of the last survivor of the Signers of the Declaration of Independence. It has an elevated situation, convenient to both prairie and timber, and is one of the best interior business centers in the State. Before the county was thickly settled, and laboring under many disadvantages, the five merchants who were in business in 1847 imported upwards of $50,000 worth of goods, and exported 357 tons of hemp, 206 hogsheads of tobacco, 26,050 bushels of wheat, 11,000 slaughtered hogs, and 2700 barrels of beans. This was twelve years ago. The

increase in every department since has been very great. This place was incorporated March 12, 1849, and contains about 1100 inhabitants.

De Witt (formerly called **Windsor City,**) was one of the principal seats of the Mormon war; it is a pleasant town, and contains a population of 300. **Miles Point,** 200; **Coloma,** 250; **San Francisco,** 30; **Hill's Landing,** 200. Distance from the county-seat to Utica on the Hannibal and St. Joseph Railroad, thirty miles; to the Missouri River, six miles.

CARTER COUNTY.

This county is situated in Southeast Missouri, bounded on the east by Wayne and Butler, west by Shannon and Oregon, north by Shannon and Reynolds, and south by Ripley County.

This county was organized March 10, 1859, and is named in honor of one of its earliest and most respectable citizens, Mr. Zimri Carter. In 1860 it contained 1089 inhabitants.

The surface is quite broken and heavily timbered, with fertile valleys which produce good farm products, while the slopes and the hillsides are well adapted to the culture of the vine, and all kinds of fruit. The same minerals so abundant in all the counties surrounding it also exist here—iron and copper especially. (See description of Wayne County for geological and mineralogical features.)

The principal stream in the county is the Current River, which is rapid and clear—so transparent that a half dime can be seen to a depth of twenty-five feet. Yet, strange as it may seem, there is considerable ague along its banks, for which the settlers say they see no good reason. Let them cut down enough of the dense pine forest to admit the sun and air freely, and when thoroughly dry, burn the leaves and decaying wood that create so much miasma, and they will have no more ague.

The scenery along the Current is truly grand—just such as "poets most do rave about, and artists paint." The steep, rugged cliffs of pure white limestone are overshadowed by pines of every size, from the beautiful little dwarf that clings to the sides and crevices of the projecting rocks to the giant old sentinels that tower up from the summit of the cliff. Here are cascades that rush through perpendicular walls, or murmur through the little valleys and natural bowers, tarrying here and there, on the way, in beautiful pebble-bottomed

ponds, in whose crystal waters the speckled trout are found in abundance. This is a favorite section of the State for fishing and sporting parties.

VAN BUREN is the county-seat, but the name will probably be changed. Population of county about 4000.

CASS COUNTY.

This county is situated in the western part of the State, bounded on the north by Jackson, east by Johnson and Henry, south by Bates, and west by Kansas Territory. This was formerly called "Van Buren" County, but the name was changed to Cass, February 19, 1849. Area, about 669 square miles. Population in 1860, 9869.

Physical Features.—Probably three-fourths of this county is prairie, and the remainder good timber, consisting of hickory, oak, linn, hackberry, elm, walnut, and sugar-tree. On Big Creek is a large grove, consisting of post oak, black walnut, and black locust—the latter rarely met with in this section. The surface is undulating, and some portions marshy. The soil is fertile, and adapted to most agricultural purposes. This would be a good section for stock growing. The county is watered by the middle fork of Grand River and Big Creek and their numerous tributaries, and by many springs, one of which is a petroleum (commonly called tar) spring. This is situated near the middle of the western boundary of the county, five miles west from Cold Water Grove. The petroleum forms upon the top of the water, but at certain seasons of drought the spring yields no water, and the petroleum fills the basin, and has been used for lubrication, and in some instances been burned in lamps. There are several elevations, called "knobs," in the north-central part of the county, from the summit of which a view is afforded of a considerable section of country. There are many conjectures as to the origin of these knobs—some contending they are natural, others that they are the work of the Indians. In some of the knobs in Johnson County, near the top, is a stratum of limestone, which can be seen around the sides, proving conclusively they are not artificial.

The county is well represented by merchants and professional men, but good openings for most kinds of mechanics, farmers, and stock growers, who will here find a fertile soil, good water, excellent schools,

numerous churches, and good society. Cultivated land about $16 per acre—unimproved from $4 to $6.

HARRISONVILLE, the county-seat, is situated near the center of the county, has an excellent brick Court-house, and the principal business houses of the county. Incorporated March 4, 1857; population about 900.

Pleasant Hill is a thriving town, ten miles northeast from the county-seat, on the waters of Big Creek. The location is pleasant and commanding, and the surrounding country well settled by industrious farmers. This town was incorporated March 14, 1859; population 900. **Austin**, population 200; and **Dayton**, population 100.

CEDAR COUNTY.

This county is situated in the west-southwestern part of the State, bounded north by St. Clair, east by Polk, south by Dade, and west by Vernon County, which separates it from the Kansas line. It is intersected by Sac River, and also drained by the east fork of Sac River, and by Cedar and Horse Creeks, and has an area of 435 square miles.

The first settlements were made here in 1832; and the county in 1850 contained a population of 3360; in 1856, 5395; and in 1860, 6653.

The surface of the county is undulating, with about an equal division of prairie and timber. Stone coal is abundant, and worked only for neighborhood uses. There is unimproved water power upon the Big and Little Sac, and Cedar Creek.

The soil is fertile, producing as high as 75 bushels of corn to the acre, 35 of wheat, 20 of rye, 50 of oats, 300 of potatoes, 2 tons of wet timothy and Hungarian grass. The soil and climate are well adapted to agricultural purposes, and especially to fruit growing. Stock raising is a very profitable business in this section.

There are eleven churches in the county: Methodists, Baptists, and Christians are most numerous. Of schools there are 35, including both public and private—no high schools.

Of business houses in the county, there are 14 merchants, 6 grocers, 2 druggists, 1 silversmith, 15 blacksmiths, 4 wagon-makers, 2 saddlers, 2 tailors, 2 shoemakers, 5 cabinetmakers, 14 carpenters, 1 cooper, 6 saw-mills, 3 flouring-mills, and 2 hotels; also 5 lawyers and 19 physicians.

Farmers, mechanics of all kinds, and millwrights are wanted.

The principal towns in the county are **STOCKTON**, the county-seat, 300 population; **Clintonville**, **Whitehair**, **Centerville**, and **Mountain Valley City**. The name of **Lancaster** was changed to **Fremont**, January 2, 1847, and **Fremont** was changed to **Stockton**, February 8, 1859.

CHARITON COUNTY.*

This county is situated in the north central part of the State, bounded on the southwest by the Missouri River, southeast by Howard County, east by Randolph and Macon, north by Macon and Linn, and west by Carroll County, and contains an area of 800 square miles. Population in 1860, 11,983.

Chariton County was named after the river which runs through the eastern part of the county, and the river is called after an early French trader who had his fur-trading agency near its mouth. The name is pronounced "*Share-e-ton.*"

When Lewis and Clark explored the Missouri River in 1803, the Big and Little Chariton Rivers, which now unite about a mile before they empty into the Missouri, had separate outlets; and the Indians had a tradition of a large lake in the fork of the Charitons, in which they paddled their canoes, and from which they caught many fine fish. The traces of this lake are still apparent. This county has the Missouri River for its southern boundary, and is mostly embraced between its tributaries, the Grand and Chariton Rivers; and when organized from Howard County in 1820, extended north to the Iowa line, a territory now comprising several populous counties.

History.—The earliest American of whom we have any information, who lived in the county, after Lewis and Clark, in 1803, was George Jackson, who afterward served in the Legislature as its representative. Mr. Jackson penetrated into Chariton County from Boon's Lick on a hunting expedition, where he met a great many Indians who then had their hunting grounds there, for game was very abundant. There was no permanent settlements made until the year 1816, when John Hutchison, deceased, visited the county from Howard, prospecting, and selected his place on Yellow Creek, about

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* We are indebted to R. H. Musser, Esq., for an elaborate description of this county; also of the Grand River Country.

twenty miles from Brunswick, where he lived until his death in 1857, forty years, and died full of years, and the deserved respect of his neighbors. It was perhaps a few years later that Henry Clark, now a venerable old man, revered for his piety and uprightness, settled at his present home on Clark's Branch, in Clark Township, both of which will perpetuate his name.

In 1817 our squatter had his cabin in a little bottom prairie on the banks of the Missouri River, then about a mile, but now not more than half a mile from the mouth of Grand River, the spot where the City of Brunswick now stands. The late Stephen Donohue, who died the owner of near four hundred quarter sections of land some two years since, and who had settled at the then new village of Chariton, visited the spot, as he informed us, in that year: he found the squatter in a tolerably comfortable wigwam. The effects of the war of 1812 had produced a distress almost unknown since, and hard to be conceived now, even since the panic of 1857. Mr. Donohue saw what he supposed to be the carcasses of several deer lying beside the cabin, with wild bees buzzing around them, and inquired of the squatter what he would do with so much spoiled venison, and was informed that they were deer skins filled with honey. It was on this occasion that Mr. D. bought sixty gallons of honey; and as a money payment for anything was never thought of, a silver dollar being a curiosity, he gave in exchange two bull-dogs.

Martin Palmer, (who was known as the "Ring-tail Painter,") a singular man, and a recluse in his habits, had, about this time, his cabin on Palmer's Creek, somewhere about the western edge of the Bowling Green Prairie. From him this creek took its name. Palmer was a rough man, but hospitable and intrepid; he was a man with many eccentricities, but of good native talent. He was the first representative in the Legislature from Chariton County. An anecdote is told, that while at the seat of government, at Jefferson City, then rather a primitive village itself, a general fight occurred before the mansion of the Governor, and Governor Clark came out to preserve the peace and dignity of the young State. Palmer, who had not left at home his chivalrous notions of free fight and fair play, seeing the Governor about to interfere, threw off his coat and shirt, and stepped in himself, swearing it was a free fight, and a Governor was no bigger than any other man. Palmer was an athletic man; his native State was Kentucky, and some apparent mystery seems to have hung about him which his compeers could not fathom. What became of him is not known, as the country in a few years became too civilized and luxurious for him, and he removed farther west.

It was about this year, 1816–17, that Chariton was laid out as a town. General Duff Green, now of Washington City, in company with the late John Moore, were the principal proprietors. So flattering were the prospects of the young metropolis then laid out at the base of the bluffs near the mouth of the Chariton River, that Mr. Moore exchanged property in the City of St. Louis, then the metropolis of a State containing sixty thousand people, for a like amount in Chariton. Chariton is the oldest town in the county. It soon rose to be of some local importance, and among its lawyers it ranked such names as Archibald Gamble, Henry S. Geyer, who afterward found deserved distinction in a more appropriate field. Stephen Donohue built there a brick store-house costing some $4000, which the sheriff sold for him in a short time for about the price of the brick, so sudden and severe was the revulsion in its fortunes. Such are human vicissitudes—Chariton is now *a farm*, and St. Louis one of the most opulent and important cities in the Union! The times were hard, in consequence of the late war with Great Britain, and it proved an inauspicious time for building cities. But other causes contributed to the decline of Chariton. It proved to be exceedingly unhealthy, the settlers fell sick, and many cases of sickness resulted fatally, so that it subsided, after languishing a few years, into a cross-roads village. In 1817–18, the Ashby family moved into the county; in the same year the father of Mr. John P. Williams, who had prospected the year before for a place, came into the county. The father of Mr. Duncan Locke moved in about the same time; likewise Colonel Bell. The late Fulton Turner, Esq., and Judge Jamison, settled in Chariton County, in the bottom a few miles west of Chariton, about this time or perhaps a year later. The remains of these old plantations are yet marked by a vigorous growth of young cottonwood trees where their fields were inclosed and in cultivation.

The years 1818–19 were marked by considerable accessions to the population, most of them valuable and excellent men. It was about this year Thos. Stanley settled on Grand River, near where he still resides, herding cattle and hogs for the winter, during which season he lived in the hollow part of a huge sycamore, keeping his fire outside. This habitation proved highly convenient, as after he had cut it off to a suitable length, it was light enough for him to roll it around out of the smoke when the wind was in the wrong direction. Here he lived as comfortable as a prince. With such books and newspapers as the settlements afforded he spent his long winter evenings; a sycamore splinter dipped in raccoon-oil supplied him with light, and the wild game of the forest and prairie furnished his table.

In the year following, the State was admitted into the Union by act of Congress, and Missouri adopted her State Constitution. By an act of the first Legislature passed in 1821, Chariton, which had formerly been a part of Howard, was erected into an independent county, including in her widest boundaries from the Missouri River to the southern boundary of the territory of Iowa, westward to the territory of Ray County. What are now Linn, Sullivan, Putnam, and parts of Adair and Schuyler Counties were included in these bounds.

The county was organized in 1821, with Chariton as a temporary county-seat. Colonel Edward B. Cabell, now deceased, was the first County and Circuit Clerk. Colonel Cabell had emigrated from Kentucky in 1818, and settled in Chariton. The seat of justice remained at Chariton till 1832, when **Keytesville** was laid out. Keytesville was called after the Rev. James Keyte, who immigrated at an early day to the county. His residence was on part of the town tract, as originally laid, and vestiges of it yet remain. Mr. Keyte was a Methodist clergyman, a native of Lancashire, England. He was a man of great energy and foresight. He laid out the City of Brunswick, and died about the year 1846.

Chariton continued to be a considerable point for tobacco shipments for some years, but the town of Glasgow, in Howard County, was laid out by Mr. Fulton Turner and others, within two miles of it, and partly within the borders of Chariton County, and as Glasgow's prosperous trade grew up, Chariton languished more. It was finally abandoned by all except Mr. John Moore, Sen., father of the present Representative from the county, who continued to reside there till the day of his death, which occurred in 1857, in a most tragic manner, he having been murdered in his own house by a madman whom nobody knew.

At this early day there was a mania for "paper towns," for about this time some shrewd, enterprising man laid out the city of Hamilton, on the Missouri River, and sold the lots East, perhaps at speculative prices. Hamilton was situated in the Missouri River bottom, about midway between Brunswick and Glasgow, by the river. At present it has no owners, but many claimants under tax titles. It is occupied as a wood-yard by any fortunate man who can get possession of it and hold it. Its only building is a small cabin, which, for want of other owner, is still taxed to the soldier, a man named Beckwith, who served for it.

The Indians, at the early day in which Chariton was flourishing were numerous, and sometimes troublesome. Skirmishes with them were not unfrequent, for they made forays occasionally into the settle-

ments, stealing horses, or whatever valuables they could find. These inroads on the settlements were always resented, and in most instances the property recovered.

The early settlers were principally from the tobacco-growing regions of Virginia and Kentucky, and finding both soil and climate here admirably adapted to its growth, entered largely into tobacco culture, with great profit and success, although the price rarely exceeded $2 50 to $3 per 100 pounds. Corn was so extensively produced as to be dull sale at ten and twelve and a half cents per bushel. The spontaneous products of the forests and prairies furnished an abundance of food for stock, so that there was but poor demand for corn at home or abroad. The Missouri was then navigated only by rude keel and flat-boats, which, with return cargoes, were obliged to be *cordelled* up the stream. As will be seen by reference to the "History of the Introduction of Steam Navigation upon the Western Rivers," in Book II., there was yet no steamboats on this river, and no inducements to raise produce for transportation.

Other causes than that of the unhealthiness of old Chariton prevented the growth of this county. After the late war, Congress passed an act granting pensions to the soldiers of that war, giving 160 acres to each one who was honorably discharged, and to the widows and orphans of those who were killed or died in the service. The three Territories of Illinois, Missouri, and Arkansas were selected as the proper places to settle these soldiers on their lands. As near as could be judged, the best lands were selected for them in every one of the Territories and distributed among them by lot. About five thousand quarter sections were drawn by soldiers in Missouri, the principal part of them in Chariton County, and portions of the Counties of Carroll, Livingston, Linn, Macon, and Randolph, north of the township line of fifty-two and fifty-three. These lands principally fell into the hands of speculators, who held them, expecting the improvements upon lands around them would greatly enhance their value. The title to a considerable portion of this land has from that date to this been in dispute; however, nearly all of these titles have been perfected. The titles called "Spanish Floats," being portions of land granted the sufferers by the New Madrid earthquakes in 1811, were in part located in this county, but never caused any litigation. The old town of Chariton was located upon one of these grants.

In 1844 the high water overflowed the Missouri, Chariton, and Grand River bottoms, so that a very large proportion of Chariton County was inundated. The Charitons are streams which furnish

much valuable water power, and the mills established on them were from the first of the greatest convenience to the people and afterward to the sparse settlements which radiated from Chariton into Linn, Livingston, and the counties north. These streams were all overflowed to the very great damage of the farmers. This overflow had a most disastrous effect on the settlements in the county as well as the towns within its border. It ruined many and discouraged all. For years the settlement of the rich lowlands and second bottoms were retarded. These lowlands are not now, however, subject to overflow as formerly. The beautiful meadow and farming land, owned by Major R. P. Price and others near Brunswick, now worth $200 an acre, was once covered by a large lake, extending to Lake Creek.

Tobacco.—The County of Chariton is one of the largest tobacco-growing counties in the State. The crop for 1858 was estimated at 5000 hogsheads, or 6,000,000 pounds. It did not probably amount to so much. It is supposed from reliable data that the crop of 1859 will exceed the year previous about 1,000,000 pounds. This tobacco is mostly put up for the European markets; the strips and higher grades being shipped to Liverpool and London, the lugs and lower grades to Antwerp. The stems are sold in America. Since 1850, the crop is more than doubled in quantity. Previous to that time tobacco rarely ruled higher than $4 the 100 pounds; in 1855, it rated at $10, and as high as $12; in 1858, from $5 to $6.

The taxable property of the county in 1858 was about 4½ millions; in 1859, it was between five and six millions.

In the year 1850 there was in Chariton County 6106 neat cattle, 6752 sheep, 15,370 hogs. The crop of that year was—337,397 bushels of corn, 2,667,908 pounds of tobacco, 12,671 bushels of potatoes, 114,056 bushels of oats and rye, 50,890 bushels of wheat, 15,212 pounds of wool, and nearly 700 bushels of peas and beans. The culture of hemp was not then fairly begun; about the year 1836 the crop of the county was estimated at 300 tons.

Physical Features and Minerals.—The physical conformation of the county, its coal fields, its streams, and its advantages for commerce and manufactories.

Coal is abundant in every region of the county. But only the surface veins have so far been opened by the farmers, except in one or two regions. Underlying these surface veins there are thicker and more valuable veins capable of being profitably worked into shafts and drifts, and in many cases rich enough to warrant the use of machinery. The richness and abundance of the coal measures in Linn, Macon, and Livingston Counties, on the line of the Hannibal

and St. Joseph Railroad, is patent to the world. Many of the richest veins are on the company's lands, and these owners are too shrewd not to make them abundantly known. The coal fields of Chariton County are strata lying below them, and crop out on the slopes which drain them to the Missouri River, while they in all probability underlie them at a depth of 200 feet or more. The mines worked by the Messrs. Kirkham, English colliers, with a drift, are about one mile and three-quarters from Brunswick. Four or five veins, in a regular series, conforming to the out-crops in other parts of the county, as well as the formations in Carroll, Saline, and Lafayette Counties. The vein at present worked is the fourth from the surface, and underlies a thick stratum of shale, being imbedded on about one foot of fire clay, adapted to the manufacture of pottery and fire bricks. This vein has yielded so far a sufficient quantity to pay well for working it; but beneath it there is a stratum of three feet thickness cropping out on Brush Creek at about high-water mark. The fine veins mentioned furnish about seven and a half feet thickness of coal, within the space of some fifty feet. They are convenient to Grand River, and can be worked so as to supply steamboats on the Missouri River by means of flats. A similar formation is found on Brinker's addition, occurring in connection with sandstone. A vein of coal of one foot in thickness will yield about 44,000 bushels to the acre; the two veins Messrs. Kirkham propose working, being five feet in thickness, will yield 220,000 bushels to the acre, leaving out the surface veins. The mines of Mr. Samuel Matthews, Mr. Bruce and others in other parts of the county adjacent to Brunswick, furnish a good coal for heating and household purposes, and are mostly surface veins without mass of any solid material to render them capable of being worked by drifts or shafts with safety or profit. But they are above the "Kirkham mines," inasmuch as the country rises gradually from the Missouri River; and as you go northward toward the coal measures of the Hannibal and St. Joseph Railroad, successive outcrops of veins, varying in thickness and quality, occurring at regular intervals, indicate that the formation is homogeneous. At an altitude above the level of Kirkham's mines of about 200 feet, a vein occurs of four feet in thickness—probably corresponding with a vein in Macon County of about the same altitude—at Huntsville, in Randolph County. It is opened under the hill, just behind the Baptist College, and furnishes a very good article of coal for smiths; the seams run northwest and southeast, as we believe they do in all the strata. Assuming that these coal measures in Chariton are but a part of the same general system

indicated by the formation, in Linn, Macon, and Randolph, and that the average thickness is the same as indicated within the fifty feet examined at the "Kirkham mines," it would give thirty feet of solid coal for every square foot, or 1,320,000 bushels to the acre. And, to go farther, let us assume that the same formation extends with the same rising series of outcrops to the summit where we find the sources of the Chariton and Grand Rivers; at Chariton, in Iowa, 1200 feet above the level of the Missouri River, assuming thirty feet of solid coal to every 200, we would have there 180 feet of coal; at the Iowa line, about 800 feet above the Missouri River, we would have 120 feet, or 5,280,000 bushels to the acre. Suppose 12,000 square miles thus rich with coal fields, not going below the strata which crop out on the level into the Missouri River at high water, it is not unsafe to assume that the series may extend to a level of the Gulf of Mexico, perhaps 2000 feet below, estimating the average fall of the Missouri River and Mississippi at eight inches to the mile. What untold mines of wealth must this country contain! Each mile square contains 640 acres, which, at the average depth of 120 feet found for the Iowa line, would show 348,720,000 bushels to the square mile; assuming 7000 square miles as the area of the Missouri Grand River country, we have on this basis, 2,441,040,000,000 bushels. Estimate one mill a bushel for a profit on working these mines—what is their value? $2,441,040, (nearly $2,500,000.)

It is not our province to descant on the coal measures of North Missouri. But it may be proper here to support our hypothesis by some data. As you ascend the Missouri River from its mouth, successive veins are known to crop out in regular series. The vast beds of cannel and bituminous coals found in Callaway and Carroll Counties occur. The beds of Boone and Cooper occur above them; again, in Saline and Howard, in Chariton, Carroll, and Lafayette; farther on they occur again in Kansas, at Leavenworth, above St Joseph; at various points in Nebraska, till you reach Omaha, and even into Dacotah, and on the Iowa and Minnesota sides of the river. As you ascend the tributaries of the Missouri on the north side, the same series successively occur till you reach almost the very sources of the Grand and Chariton Rivers, where they seem to dip in under the summit, and perhaps crop out again, in successive strata on the northern slope which supplies the waters of the Des Moines. Again, the smaller tributaries to these great tributaries of the Missouri furnish the same phenomena. Let us suppose that the vast veins of Callaway and Cole Counties, dipping under the bed of the Missouri River as they go westward, underlie all the vast country, of like geology and

of apparently common origin. Estimate the average amount in bushels per acre, to the level of the Gulf of Mexico, and we have a result almost inconceivable. These hypotheses we have been led into from the data before us.

The coal of Chariton County is bituminous, so near as can be judged—we might say it is conjectured to be identical with the bituminous coals found in New Brunswick and Nova Scotia. It is said to be well adapted to the production of excellent coke for foundery purposes, most of which, used in the various founderies of St. Louis and other parts of the State, is brought from Pittsburg. It is worth while, at least, testing its qualities.

Schools.—The first fund from which Chariton County receives school revenues, is the proceeds of the sales of the sixteenth section in every township granted by a general act of Congress, made in the year 18—; from this source she receives annually about $3000 from the State school fund; for the year 1859 she received (*vide* Superintendent's Report) about $3500. In 1850, an act of Congress granted the swamp and overflowed lands belonging to the United States, for the purposes of public education. In 1852, a gentleman in Carroll County selected, as the county domain, fifty-six thousand acres. In 1853, the Legislature passed a general act respecting these lands and directing the manner of their sale by the several counties, a previous act having granted them to the several counties. In 1857, the patents having been duly received, vesting the title in Chariton County to all the swamp lands south of the township line of 55–6, in June of that year the county sold at public auction about 23,000 acres, yielding $111,000. In the mean time, the patents were received for the lands lying in township 56, and these, together with the lands unsold, lying south of that township, leave still a county domain of about 33,000 acres. The income of the county in trust for the school fund is about $18,500. If we estimate the gross fund as $185,000, and add the average value of her unsold lands at the average prices of 1857, $4 84 per acre, we have $148,720, and an aggregate of $333,720.

KEYTESVILLE, the county-seat, is situated upon a beautiful plateau, near the center of the county, on the Muscle Fork of the Chariton River. It was laid out in 1832, and has a population of about 300. It is a place of considerable local commerce, and a heavy business is done in preparing and shipping tobacco for foreign markets. There are a number of extensive business houses here, and the principal trade is in tobacco—the establishment of Messrs.

Garth and Price, at Keytesville Landing, being the heaviest, and doing the most extensive business.

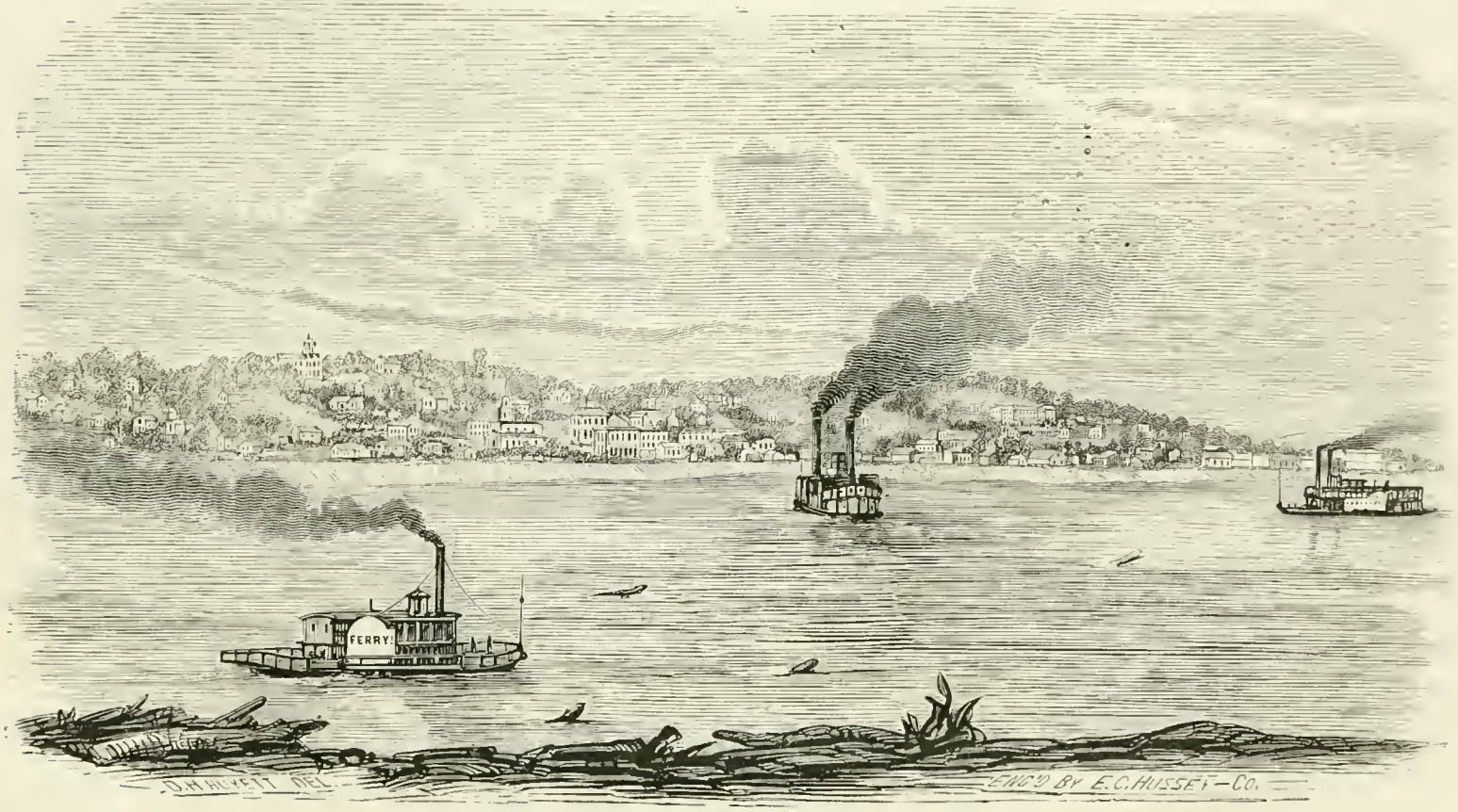
Brunswick, the commercial town of the county, occupies a charming location on the left bank of the Missouri, just below the mouth of Grand River. It was laid out in 1838, and now contains about 1800 inhabitants. The town and the adjacent country suffered greatly from the overflow of the Missouri, in 1844; however, business revived and flourished again until 1850, when the greater portion of the business houses in the town were destroyed by fire; and in 1854 another conflagration took place, equally if not more disastrous than the fire of 1850. The principal buildings are now made fire-proof, and built in a more substantial and indestructible manner, and there is not a town on the Missouri River, between Kansas City and St. Louis, that presents more unmistakable evidence of permanent improvement and advancement than Brunswick.

In 1847, the western addition to the town was laid out by S. B. Kyler, Esq., as attorney in fact for Richard Pendell, of Lexington, Ky., who purchased the quarter section from Honorable Henry Clay. The year following, the northern addition and Woodson and Thompson's addition were added; in 1858, Brinker's addition was laid out; and in 1859, all the additions were brought into the corporate limits of Brunswick, which now contains about 600 acres. In 1859, a steam ferry was put into operation, and a ship-yard established at Brunswick.

There are two papers at Brunswick: the Brunswick Press, conducted by Mr. D. D. Hawkins, a well conducted paper, about two years old, neutral in politics; the Central City and Brunswicker, under the editorial charge of Dr. H. W. Cross, an elegant writer and a pleasant gentleman. The Brunswicker is now in its twelfth year, and was the pioneer newspaper of the county, having been established in 1847, by Dr. Jno. H. Blue, a gentleman who will long be remembered as an untiring and skillful editor, whose foresight, tact, and energy contributed much to the rapid progress and development of this county and of the Grand River valley.

In 1848, Colonel Whistler, of the United States Army, caused to to be laid off, on a quarter section of land lying west of what is now Brinker's addition to Brunswick, a town which he called Grand River City; but this city has not grown much, and is now principally vacant lots, or in cultivation as a cornfield, by Dr. Blue. The other towns in the county are small villages.

Bymmsville, a post village, laid off, we believe, by Mr. Fallestein, now of St. Louis, at his old county residence, in Ber Branch township.



BRUNSWICK, MO.

Westville, laid out by Dr. West, in 1854, in Clark township.

Elk Spring, laid out in 1859, by Dr. Murray, in Yellow Creek township.

CHRISTIAN COUNTY.

This county is situated in the southeastern portion of the State, bounded on the east by Taney and Webster, west by Lawrence and Stone, north by Greene, and south by Stone and Taney Counties.

This is a new county—having been organized March 8, 1859. In 1860 it contained 5549 inhabitants. The face of the country is undulating—some portions approximating to what may be called broken. Generally heavily timbered, with excellent soil in the valleys and upon some of the uplands. (See description of Greene County, from which it was formed.)

Land under cultivation can be had for about $9; uncultivated, from $2 to $4. The soil and climate both adapt this county to fruit culture or stock growing.

Minerals.—Extensive deposits of iron ore have been found in this county, and small quantities of lead and copper, with indications of rich openings.

When completed, the Southwest Branch of the Pacific Railroad will afford a cheap and speedy transit to market.

OZARK, the county-seat, is situated on Finley Creek, fifteen miles from Springfield, Greene County; contains a high school, two churches, Methodist and Christian, flouring and grist mill, two distilleries, four saw-mills, and a fair representation of stores, mechanics, etc.

Kenton is five miles from Ozark; has a population of about 100—one church and school and several business houses.

The county contains a population of 6000.

CLARKE COUNTY.

This county forms the extreme northeast corner of the State, is well watered by the Des Moines and Mississippi Rivers, (which form its eastern and northeastern boundary,) and by the Fox and Waconda Rivers, and their tributaries. These streams are all skirted by groves of timber, while the "divides" between them are prairie. It was first settled in 1830, and now, 1860, contains a population of 9794.

This county is very advantageously situated—divided only by the Des Moines from the largest commercial city above St. Louis, on the Mississippi, and being located at the mouth of one of the richest valleys in the great and fertile West. If the north line of this county was continued due east until it reached the Mississippi River, making Clarke a square county, it would give her about a dozen towns in Iowa, including the cities of Keokuk and Fort Madison, all of which she now has for a local market if desirable.

The soil of this county is rolling and fertile, well calculated for farming purposes. The timber (of which there is a good supply) consists of oak, hickory, elm, etc. There are several banks of good stone coal in the county, and some excellent cannel coal. Uncultivated land is worth from $7 to $10, and cultivated from $15 to $25. Farmers and mechanics of all kinds will find in this county good business locations.

Industrial Pursuits.—There are in the county 2 banks, 1 newspaper, 13 lawyers, 25 physicians, 50 merchants, 5 grocers, 4 druggists, 1 silversmith, 3 tinners, 25 blacksmiths, 10 wagon-makers, 1 saddler, 5 tailors, 15 shoemakers, 5 cabinetmakers, 40 carpenters, 10 coopers, 15 saw-mills, 5 flouring-mills, (steam and water power.)

Churches, Schools, etc.—There are two academies and forty-eight district school-houses in the county, and in 1838 there were 4332 children between five and twenty years of age. There were $1836 60 raised in 1858 to repair and build school-houses. Of churches, the Presbyterian, M. Protestant, M. Episcopal, Christian, Catholic, and Baptist, have each organizations and pastors. The Freemasons, Odd Fellows, and Sons of Temperance have each organizations.

WATERLOO, the county-seat, has a population of 250; **Alexandria**, 1200; **St. Francisville**, 700; **Athens**, 600; **Winchester**, 350; **Fairmount**, 350; **Luray**, 200; and **Cahokia**, 200.

CLAY COUNTY.

This county is situated in the west-northwest part of the State, bounded on the north by Clinton, south by the Missouri River, separating it from Jackson, on the east by Ray, and west by Platte Counties. The first settlements were made in the fall of 1822. When the State was admitted into the Union, in 1821, the territory now embraced by the boundaries of Clay County had not a single white inhabitant; yet the census shows Clay in a very short time to have increased so rapidly that it was the most populous county west of Franklin. Its population in 1860 was 13,161.

Physical Features.—The face of the country is somewhat broken, and generally well timbered, with small prairies in various portions of the county. The soil is remarkably fertile, and the county well watered.

Soil and Productions.—This county is noted for its fine farms, and wealthy and intelligent farmers and stock growers. The following product of a small farm of 320 acres will give an idea of the fertility of the soil, and the class of farmers who cultivate it: 15 tons of hemp, at $90 per ton; 5000 pounds bacon, at 8 cents per pound; 3 yoke of cattle, at $60 each; amounting to the sum of $1930. At the time this estimate was taken there were 75 acres of wheat, at 70 cents, and 30 of corn, at 25, growing, which would swell that year's product to $3730. This was but an average crop, and was the product of 1853, since which time many improvements have been made, and prices of many articles advanced. We have returns from farms that have produced per acre, of hemp, 1400 pounds; tobacco, 1100 pounds; corn, 100 bushels; wheat, 38 bushels; rye, 30; oats, 50; potatoes, 400; onions, 400; beets, 350; carrots, 300; turnips, 300; timothy, 2 tons; Hungarian grass, 4 tons, etc. The county is very well adapted to stock raising, which is an important feature in the products of the county. According to the statistics of the census of 1850, Clay was one of the most productive agricultural counties in the State; notwithstanding which, there were then 142,661 acres of unimproved land in the county. The Platte County Railroad, which is being built, will furnish an outlet to the western portion of the county, while the southern borders upon the Missouri River will afford cheap transit to the superior markets of either Kansas City or St. Louis.

Schools.—The citizens of Clay have taken a deep interest in the cause of education. This was the first county in the State to organize teachers' institutes, and now a majority of the counties throughout the State are reaping the advantages of these associations. The State Superintendent's Report shows the amount of money raised to build school-houses, and also the average monthly wages paid teachers, to be higher than of any other county, except St. Louis. William Jewell College, (situated at Liberty,) Rev. Wm. Thompson, President, was organized in 1857, and last year had 125 pupils in regular attendance. This institution is under the auspices of the Baptist denomination. The Clay Female Seminary, also situated in the county-seat, is in a very flourishing condition. Professor James Love is well known as an accomplished and successful teacher. Liberty Female College has just been organized, with fair prospects of success. Lewis Institute, at Greenville, is under the control of Professor Lewis, of the M. E. Church South, and is well patronized. This county is one of the first in the State as to the number and character of educational institutions.

Natural Advantages.—Farmers, mechanics, manufacturers, and business men of all classes will here find fertile soil, a healthy climate, abundance of timber and building materials, good prices and a ready market for all products either agricultural or mechanical, and an intelligent, industrious, and hospitable people.

LIBERTY, the county-seat, contains 1132 inhabitants, and is situated fifteen miles from Kansas City. Of business houses, there are in this town, 3 bankers, 1 newspaper, 5 lawyers, 12 physicians, 10 merchants, 3 grocers, 20 carpenters, 2 druggists, 4 silversmiths, 7 tinners, 17 blacksmiths, 6 wagon-makers, 2 coopers, 1 flouring-mill, (steam.)

Missouri City is situated directly on the river, and is the shipping point for the county; was formerly **Richfield** and **St. Bernard**, which were consolidated under the name of Missouri City, and the new town incorporated March 14, 1859. Besides a full representation of the different business houses, there are here one grist and two saw mills, and a very extensive flouring-mill. Population about 700.

Of other towns in the county, there are **Smithville**, population 200; **Greenville**, 300; and **Claysville**, (changed to **Prospect Hill**, February 5, 1859,) 300.

CLINTON COUNTY.

This county is situated in the northwestern part of the State, bounded on the west by Buchanan and Platte, which separate it from the Missouri River—the western State line. Population in 1850, 3786; and in 1860, 7853.

Physical Features.—Probably two-thirds of the area of this county is undulating prairie land, fertile and easily tilled; the remaining one-third is timber land, confined principally to the water-courses and valleys. Blue and gray limestone and sandstone are abundant in some portions of the county, and there are indications of coal in several locations, but no thorough investigations have been made, as fuel is yet plenty. Several of the streams are rapid and have unimproved mill-seats upon them. Except in the larger prairies, springs are quite numerous.

Soil and Productions.—The soil is fertile, and will produce any kind of grass, grain, fruit, or vegetables grown in this latitude. An average crop is about as follows: Hemp, 800 pounds to the acre; tobacco, same; corn, 100 to 125 bushels; wheat, 25 to 30; rye, same; barley and oats, each 40 bushels; timothy and clover, about 2 tons. Hungarian grass has not given satisfaction here, owing probably to unfavorable seasons since its introduction. The farmers are going largely into fruit culture, and are introducing every variety of fruit grown in this climate. This county is well adapted to stock raising, having an abundance of native and cultivated grasses and stock water. Unimproved lands are worth from $8 to $10 per acre, and improved from $15 to $25.

Churches and Schools.—There are sixteen church organizations in the county: 2 N. S. Presbyterian, 5 Methodist, 5 Baptist, 5 Reformed Churches. Of other denominations we have no particulars. Of schools, there are 41 common school districts, in which schools are supported by the public fund a portion of the year. The amount raised to build and repair school-houses in 1857, was $2826. The amount of school money apportioned to this county for 1859, is $1711 89. There is one college established at the county-seat, under the auspices of the M. E. Church South.

Industrial Pursuits.—There are in the county 9 hotels, 1 newspaper, 6 lawyers, 9 physicians, 13 merchants, 4 druggists, 2 silversmiths, 2 tinners, 9 blacksmiths, 6 wagon-makers, 3 saddlers, 3 tailors,

2 shoemakers, 2 cabinetmakers, 12 carpenters, 2 coopers, 7 steam saw-mills, 2 horse-power mills, 3 steam flouring-mills, 3 steam grist-mills.

Clinton County was first settled when a part of Clay County, by pioneers from Clay and adjoining counties, but originally from Kentucky.

Of professional men, (save ministers of the gospel and teachers,) there is here, as in most counties of the State, a full supply; but honest, industrious farmers and mechanics will here find a healthy climate, good soil, and a good market for all kinds of articles they can produce.

PLATTSBURG, the county-seat, contains about 1200 population; **Haynesville**, about 500; **Cameron** (a brisk new town on the Hannibal and St. Joseph Railroad) has about 300 inhabitants, and is growing rapidly. The distance from Cameron to Hannibal is 171 miles, and to St. Joseph, 35 miles.

COLE COUNTY.

This county is situated near the center of the State, is bounded on the northeast by the Missouri River, on the west by Moniteau, on the south by Miller County, and on the southeast by the Osage River, which enters the Missouri at the eastern extremity of the county. Population in 1860, 9714.

Physical Features.—The face of the county is generally rolling or broken, with thin soil, generally well adapted to the growth of small grain and fruit of all kinds. On the bottoms of the Missouri, Osage, and Moreau, is good alluvial soil, very fertile, embracing, perhaps, one-fourth the area of the county. The soil and climate are favorable to fruit culture; the peaches seldom fail, and all kinds of fruits, including the grape, yield abundantly. The interior of the county is drained by Moreau Creek, which rises so rapidly and to such a height, that it is upon some maps called a river. Fish are numerous in this stream; and it is related by a former representative from this county who had a mill upon the Moreau, that the fish were so numerous as to frequently clog the wheels and stop the mill. Then the only alternative was to shut the gate, and beat the water with poles, and drive them away!

Building Materials.—The beautiful limestone, called "Cotton-

CAPTAIN COLE'S FIGHT WITH THE INDIANS, NEAR BIG BONE LICK.

rock," of which the Capitol is constructed, is very abundant in this county, and forms a stratum of upwards of forty feet in thickness, in the bluffs upon which Jefferson City is situated. Sandstone suitable for building; clays and sands for brick are also abundant and convenient. Limestone suitable for making hydraulic cement is found in the bluffs above the city. Lumber of every kind is found on the bluffs and valleys in Cole County, or in the Missouri bottoms above and below the city.

History.—Cole County was formed from Cooper, November 16, 1820, and named in honor of Captain Stephen Cole, the intrepid and courageous pioneer. There were settlements within the present limits of the county as early as 1816, but white families were "few and far between" until after 1820. In 1821 the population of the county was about 1300. The county-seat was located at Marion, (fourteen miles above Jefferson,) in 1822, and removed to Jefferson City, in 1828. The first settlers were from Kentucky and Tennessee. The seat of government of the State was removed from St. Louis to St. Charles in 1821, and from thence to Jefferson City in 1826, where it is permanently located. At the time of the admission of this State into the Union, Congress granted four sections of land for the location of the seat of government. The constitution fixed the location of the capital upon the Missouri River, to be within forty miles above or below the mouth of the Osage. At the first session of the Legislature, commissioners were appointed, who, after a tedious examination, selected four sections, where Jefferson City has since been built up. Major Elias Barcroft was appointed Surveyor, who laid the ground selected off into lots, under the superintendence of the commissioners in 1822. The first sale of lots took place in May, 1823, under the supervision of Major Josiah Ramsey, Jr., Captain J. C. Gordon, and Adam Hope, Esq., Trustees on the part of the State. At the same time the building of a brick State-house was let to the lowest bidder, Daniel Colgan, and afterward transferred to James Dunnica, of Kentucky, who built the Capitol at the bid, $25,000. At this time (1823) there were but two families residing in the place, to wit, Major Josiah Ramsey, Jr., and Wm. Jones, both of whom kept houses of entertainment. The State-house was completed at the stipulated time, and the Legislature assembled in the new State Capitol (just completed) on the third Monday in November, 1826. Up to this date, all the families that resided at the seat of government were as follows: Wm. Jones, brickmason, and keeper of entertainment; Josiah Ramsey, Jr., postmaster, and tavern keeper; John C. Gordon, carpenter, and keeper of entertain-

ment; Daniel Colgan, merchant; Jesse F. Roystan, teacher, and justice of the peace; James Dunnica, carpenter, and builder of the State-house; Harden Casey, blacksmith; Robert A. Ewing, sawyer; Alexander Gordon, stonemason; John Dunnica, carpenter; John P. Thomas, carpenter; Reuben Garnett, brickmason; Stephen C. Dorriss, physician; James R. Pullen, stonemason; Christopher Casey, constable; Henry Buckner, farmer; Hiram H. Baber, Esq., teacher, and justice of the peace; David Scrivner, laborer; Samuel Harrison, laborer; Geo. Woodward, merchant; and Terry Scurlock, carpenter. Besides these, were the following named single men: David Slater, carpenter; Granville P. Thomas, carpenter; Robert H. Jones, first merchant in the place; Azariah Kennedy, carpenter; Willis Thornton, carpenter; David Harmon, carpenter; Wm. Henderson, carpenter; Mr. Thompson, carpenter; McDaniel Dorriss, distiller; and Mr. Moss, grocery keeper.

The present State Capitol was commenced in 1838, and first occupied by the Legislature of 1840–41, and cost about $350,000. The stone for the building was taken from the bluffs near by, along the line of the Pacific Railroad in front of the city. The limestone for the pillars was from Callaway County. Mr. S. Hills, the architect, here planned one of the best buildings in the West, either as regards its substantial character, architectural beauty, or the interior arrangement of the legislative halls, and the several State offices.

The principal public buildings in the city are the Capitol, the State Penitentiary, the Court-house, (all substantial stone structures,) the Female College, and the Male High School. There are a number of commodious and pleasantly situated private residences in the city. The governor's mansion has a commanding location, but is inferior to the other State buildings, and will probably soon give way to a new one, which will be more creditable to the State.

Churches and Schools. — There are six churches in the city, namely: Episcopal, O. S. Presbyterian, 2 Methodist, Baptist, Catholic, Lutheran. Of schools, there is an excellent Female College, and a Male High School, well conducted; and about 35 district schools in various parts of the county.

Business Men needed.—Iron founders, manufacturers of farming implements, wagon and carriage makers, soap and candle manufacturers, millers, beef and pork packers, machinists, stock growers and grape culturists will all find good openings here. Stone coal is abundant and cheap, timber plenty, excellent building stone everywhere, and soil that for small grain, grasses, and fruit is seldom surpassed. With the Missouri River and Pacific Railroad, this county

has an excellent outlet to market, and offers many advantages to the industrious and the energetic.

There is no town of any importance in the county, except **JEFFERSON CITY,** the county-seat, which has a population of 3000. **Marion,** the former seat of justice, has now less than 50 inhabitants; **Russellville,** in the western part of the county, 16 miles from Jefferson, is a place of perhaps 100 inhabitants. Of business houses in the county, there are of lawyers, 12; physicians, 12; merchants, 15; druggists, 3; silversmiths, 3; tinners, 3; blacksmiths, 6; wagon-makers, 4; saddlers, 3; tailors, 5; shoemakers, 10; cabinetmakers, 3; carpenters, 20; paint-shops, 3; marble manufactories, 2; tanneries, 2; steam saw, planing, and lath mill, 1; steam flouring-mill, 1; and hotels, 5. The "Jefferson Examiner" and "Inquirer" are the only papers published in the county. The former is published daily during the session of the Legislature, and weekly the remainder of the year. The "Jefferson Inquirer," after having been published 21 years, was temporarily discontinued in the fall of 1859.

COOPER COUNTY.

This county is situated in the central part of the State, on the south side of the Missouri River, which separates it from Howard and Boone, and contains an area of 558 square miles, and in 1860 had a population of 17,495. It was first settled by Stephen Cole, Daniel Boone, Robert Wallace, William McMahan, Joseph Stephens, and William Moore.

Physical Features.—The face of the country is gently undulating, and advantageously diversified with timber and prairie. The western part of the county is drained by La Mine Creek and tributaries, the central part by Little Saline Creek, and the southeastern by Moniteau Creek. There are few if any counties in the State possessing a more equal division of prairie and timber. The alluvial soil occupies a large area in the bottoms of the Missouri, the La Mine and the Little Saline, and is generally covered with a heavy growth of cottonwood, sycamore, elms, box-elder, sugar-tree, white maple, red birch, white, black, and blue ash, coffee-tree, honey locust, the various kinds of oaks and hickories, red-bud, hackberry, and numerous varieties of the willow and the grape.

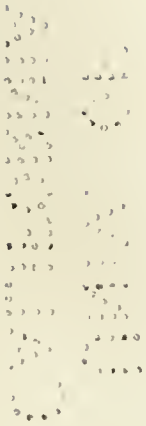
Soil and Productions.—The soil of Cooper County is exceedingly

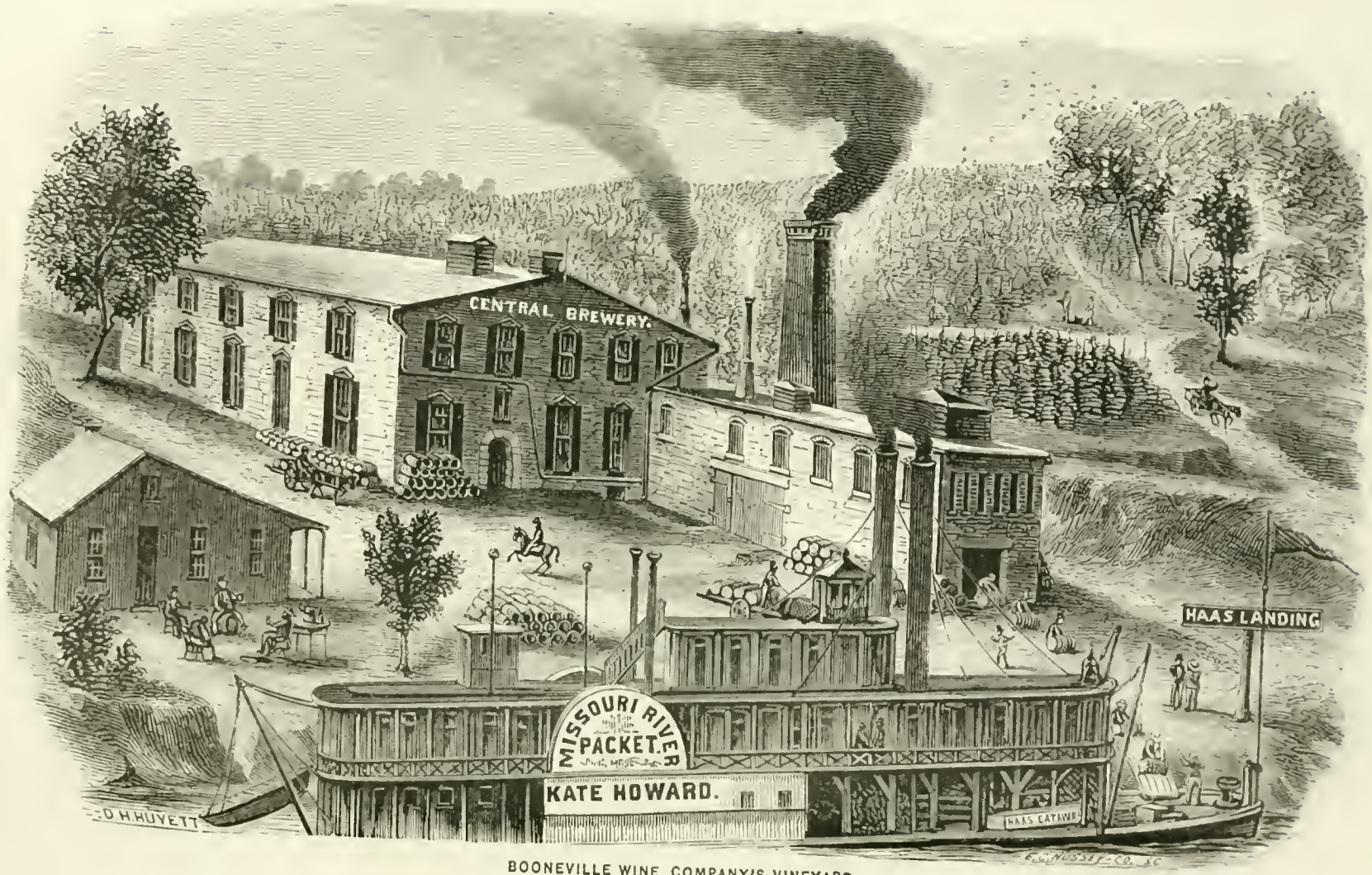
fertile, and well adapted to all the purposes of agriculture. The bottom lands are light, porous, and deep, and particularly adapted to corn and hemp, of which immense crops have been produced in some parts of the county. The soil on the prairie and in the upland timber is well adapted to corn, wheat, oats, tobacco, and the grasses, but is vastly improved by subsoiling. The upland timber consists of hickories, oaks, walnuts, sugar-tree, ash, haw, hackberry, and the summer, fox, and frost grapes. The State Geologist remarks: "The physical properties of the soils, the rocks from which they are derived, and the crops produced, all prove the agricultural resources of Cooper County to be very great. *Deep and thorough tillage* should be her motto." The general character of the soil adapts this county to the growth of all kinds of agricultural products; and the immense natural pastures, and the facilities for shipment by river or railroad, render it well calculated for stock growing.

Minerals.—Professor Swallow estimates the amount of good available coal, in Cooper County, to be not less than 60,000,000 tons. Brown hematite iron ore is found in several localities, some of which is convenient to beds of coal, and could be worked to advantage. Lead, manganese, and zinc are also found in several places. Of building materials, there is an abundance of limestone, sandstone, marble, hydraulic cement, firerock, and clays for fire brick. The timber found along the streams is as fine as any in the State.

Springs, both fresh and mineral, are abundant in this county. The latter may be classed as "brine" and "sulphur;" however, there are none of either class that are entirely free from the characteristics of the others. The mineral springs are principally in township 48, extending from section 16 of range 18, westward along the La Mine, through range 19, to the county line; but some exist in township 49, range 19, on the Blackwater; and in township 48, range 15, near Gooch's Mill, on the Little Saline. The most important of the brine springs are Harriman's, Bailey's, Howard's, Heath's, and Hugh's. At Dr. Harriman's Salt Springs, there are four places where salt water is discharged, which are from forty to forty-five feet apart; and hydro-sulphuric acid escapes from all.

Chouteau Springs are situated on section 16, township 48, range 18, about ten miles from Boonville, and have had a good reputation as a pleasant and healthy watering place. The medicinal properties of the Chouteau water are highly spoken of, and numerous individuals have received great benefit by resorting to its use. The water bursts from the earth in four places, located a short distance from each other, but the most westerly spring is generally used. The amount





BOONEVILLE WINE COMPANY'S VINEYARD.

of water discharged was estimated by Professor Swallow to be 10 gallons per minute, or 14,400 gallons per day, and the gas that escapes, at least 2 gallons per minute.

Manufactures.—The most extensive manufactory in the county is that of the Boonville Wine Company, located on the Missouri River, about one mile above Boonville. This company was incorporated by the Legislature, in 1855, with a capital of $50,000, and commenced the cultivation of Catawba wines in 1856. Their vineyard and orchard embraces 115 acres, only a portion of which is set in vines. The lands are admirably suited to the culture of the grape, being situated on a high bluff, gently sloping to the southeast, and with trifling expense could be terraced and otherwise improved, rendering it truly a beautiful spot. The fine stone building, (seen in the engraving of their vineyard,) was erected in 1858, and is well adapted to the manufacture and storage of both wine and beer. The main building, including basement, is 4 stories high, 80 feet square, with a two-story L, 55 by 35 feet, under which are six capacious cellars, one having been constructed for malt, and five large arched cellars for storage. The machinery is propelled by steam power, and the whole establishment is supplied with all the modern improvements and conveniences. Haas's Catawba has a wide reputation, not only in Missouri, but in the Eastern cities; large quantities having been sold at Philadelphia, where it received the first premium as a "native dry wine," at the National Fair. The lowest price at which it has ever sold is $2 per gallon, and the company was offered $2 50 per gallon for their entire vintage of 1857, consisting of 1600 gallons, produced from less than three acres of bearing vines; which would be $4000 for the product of less than three acres, upwards of $1133 per acre! Mr. Haas, the projector of this enterprise, is an intelligent and energetic gentleman, and to his superior judgment and long experience in the business, the company justly attribute their success; and under the management of such men as Mr. Haas, and his accomplished assistant, Mr. Wertheimer, (secretary of the company,) we anticipate a brilliant success for the company.

An extensive woolen factory and a soap and candle factory are much needed in Boonville, and would prove profitable investments.

Natural Advantages.—The agricultural resources of Cooper County, for the production of staple crops, are but little if any inferior to those of Lafayette and Platte. Within her borders there are at least 30,000 acres of the richest alluvial soil, 200,000 acres of excellent high timber land, "based upon the rich marls of the bluff formation," and about 80,000 acres of fine prairie, resting upon the same

marls. "Place but half of this in a good state of cultivation, and it would easily give an annual yield of 5,000,000 bushels of wheat, 10,000,000 of corn, or a similar proportion of other crops, while the remaining 50,000 acres of inferior soil is well adapted to the cultivation of grapes, or grass for grazing."* As we have already shown, there is an abundance of stone coal, timber for charcoal, building materials of various kinds, and several valuable minerals in paying quantities. With her central position in the State, peopled by industrious and intelligent citizens, with the navigable Missouri on the north, and the Pacific Railroad on the south, affording cheap and speedy transit to excellent markets, Cooper County has certainly very superior natural advantages.

BOONVILLE, the county-seat, is delightfully situated upon an undulating hillside, sloping to the north, and sufficiently elevated to afford an extensive view of the broad, beautiful, and well cultivated valley on the opposite side of the river. The streets are broad, running at right angles, and shaded by forest and ornamental trees. The buildings are substantial, and principally of brick, the most prominent of which are the Thespian Hall, a handsome structure, erected at a cost of $22,000, was commenced by a few young men, who constituted the "Boonville Thespian Society;" the Odd Fellows and Masons and the city joined them to get each a hall, and the work is the result of their united efforts. The original officers were, Captain E. Stanly, President; S. Houck, H. B. Benedict, Charles Cope, and Captain Joseph L. Stephens, Directors. Union Block, Episcopal Church, Branch Bank of St. Louis, Court-house, etc. Boonville was incorporated as a city, February 8, 1839, and has now a population of about 3500. According to Lippincott's Gazetteer of the World, "for health it is unsurpassed by any city of the Union, both town and country having escaped the ravages of the cholera during the epidemic of 1849–50." There are in Boonville 2 banks, (see table of Banks of Missouri,) 13 lawyers, 9 physicians, 2 dentists, 20 merchants, 6 grocers, 3 druggists, 4 silversmiths, 30 carpenters, 30 brick and stone masons, 8 blacksmiths, 4 wagon-makers, 4 saddlers, 4 tailors, 3 tinners, 3 cabinetmakers, and 5 hotels, and a large tobacco manufactory, Messrs. Spahr & Rich, proprietors, which turns out heavy amounts of first-class brands tobacco. Of churches in Boonville, there are seven, to wit: Methodist Episcopal Church, German Methodist, Presbyterian, Episcopalian, Lutheran, Baptist, and Roman Catholic.

There are other towns in this county worthy of mention.

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* Geological Reports, p. 203.

THESPIAN HALL, BOONEVILLE, MO.

COUNTRY SEAT NEAR BOONVILLE, MO.

Otterville, on the Pacific Railroad, in the southern part of the county, is twenty-six miles from Boonville, and fifty miles from Jefferson City, contains a Presbyterian Church, Masonic Lodge, Odd Fellows' Lodge, 1 newspaper, 4 hotels, 4 carriage and wagon manufactories, 5 blacksmith shops, 1 cabinetmaker and furniture dealer, 2 butcher establishments, 1 confectionery and bakery, 1 saddle and harness manufactory, 2 grocery stores, 1 clothing store, 1 lumber yard, 2 shoe manufactories, 2 livery stables, 1 jeweler and watchmaker, 1 tin and stove manufactory, 4 saloons, 5 dry good stores, 1 printing-office; and brick and stone masons, plasterers, and carpenters, although numerous, scarcely sufficient to supply the demand. The location is very healthy and pleasant, and situated in the center of a good farming region. Population about 600. Incorporated February 15, 1857.

Bellingsville is on Little Saline Creek, six miles from Boonville. A Baptist church, 2 saw-mills, and several stores and mechanics' shops. Population 75.

Belle Air, twelve miles from Syracuse, and twelve from Boonville, contains a Southern M. E. Church, district school, etc. Population 50.

Palestine, in the central part of county; population 75. **Pisgah,** 100; **Round Hill,** 100.

CRAWFORD COUNTY.

This county is situated southeast of the center of the State, is bounded on the north by Gasconade (which reaches to the Missouri River) and by Maries, on the east by Washington, south by Dent, and west by Phelps, which was recently taken from this county. Population in 1860, 5834.

Early History.—Crawford has been called the "Mother of Counties," from the fact that for many years her borders extended to the western part of the State. County after county has, from time to time, been cut from her western and southern borders, and the *finale* was accomplished some three years ago in the formation of Phelps County, when Crawford was cut down below her constitutional limits. The territory of which the county is formed was settled about the year 1815 by William Harrison, and others, who constituted a neighborhood on the Maramec. Many of the same Harrison family still

reside in the county, and are honorable and industrious men. Benjamin Harrison (the oldest son of William) is now a hale, hearty old man, has served his country in the Legislature a number of years, and still takes great pleasure in doing whatever he can to advance the interests of his county or State. From the organization of Crawford in 1830 to 1835, courts for the county were held at the house of James Harrison, at the mouth of Little Piney.

Soil and Productions.—This county embraces a great variety of soil—bottom, valley, table land, prairie, and sandy soils. It is well adapted to corn, wheat, oats, grasses, vegetables, and fruit. Stock growing would pay well here. Grapes and fruits would yield abundantly. The valleys of the larger streams are frequently heavily timbered with oaks, walnut, hickory, maple, papaw, dogwood, etc. On the school section, in township 36, range 4 west, is a grove of large pine-trees.

Minerals.—The following table shows the locality of iron, lead, copper, and coal, in Crawford County:—

IRON.			LEAD.			LEAD.		
Township.	Range.	Section.	Township.	Range.	Section.	Township.	Range.	Section.
35	2 W.	N.E. 8	36	2	7	36	2	16, 33, 34
35	3	15	37	2	14	37	3	13, 14
35	2	16	37	2	S.E. 2	39	2	N.E. 1
35	5	S W. 32	37	2	17	39	3	1
39	2	N.E. 28	37	2	32	37	4	1
37	3	1	38	2	32	37	3	3
37	3	4	38	2	15			
38	6	29	38	2	30		COPPER.	
38	3	1	39	2	1	40	2	24
36	4	N.E. 26	39	2	4, 2 & 6	38	3	14
36	5	32	38	2	33	39	3	13
37	4	5	39	2	1	38	2	4
36	3	15 & 36	40	2	23	36	4	22
38	5	10, 11 14, 15	36	2	5	40	2	22
			36	2	27	36	5	15
38	2	4	40	2	26, 27			
			36	2	31		COAL.*	
			40	2	32, 33 35, 36	36	4	S.E. 21
						36	4	S.E. 30

Churches and Schools.—The principal school of the county is the Steelville (male and female) Academy, which was incorporated February 3, 1853, and is now under the superintendence of Rev. J. B. Allen, and under the auspices of the Cumberland Presbyterian Church. It is ably conducted and well patronized. There were in the county, in

* Coal impregnated with iron pyrites.

1858, 34 school-houses, 2490 pupils, of whom 931 had been taught during the year. There were then 8980 acres of unsold school land. The amount of school fund apportioned to the county for 1859 was $1369 06. Of churches, the O. S. Presbyterians, organized in 1842—no pastor. The M. E. Church number about 125, the M. P. 100. Cumberland Presbyterians most numerous. No church edifices yet erected.

Industrial Pursuits.—There are in the county 2 lawyers, 4 physicians, 8 merchants, 8 grocers, 1 druggist, 1 banking house, 2 cabinetmakers, 8 carpenters, 2 saddlers, 2 tailors, 3 hotels, saw and flouring mills. Tinners, tailors, shoemakers, and wagon-makers wanted.

STEELVILLE, the county-seat, was organized in 1856, is situated about the center of the county, and contains some 250 inhabitants.

Cuba City is situated on the southwest branch of Pacific Railroad, eight miles from Steelville—was recently laid out, and is improving rapidly.

DADE COUNTY.

This county is situated in the southwest part of the State; was formed in 1841; has an area of 498 square miles, and had a population, in 1856, of 6061. In 1860 it contained 7095 inhabitants.

The face of the country is undulating, and in some portions broken—more prairie than timber—and has a healthy climate.

It is intersected by Sac River, an affluent of the Osage, and also drained by Horse and Cedar Creeks.

The soil is generally fertile, and well adapted to the various purposes of agriculture, horticulture, and stock raising.

Water power is abundant, and upon some of the streams unimproved.

Copper ore has been found upon sections 23 and 24, in township 30, range 25 west, and hematite iron ore on section 23 of the same township. Stone coal has been found in several parts of the county, but is not yet worked to any extent. Timber is abundant along the valleys—enough for all practical purposes.

The mildness of the climate, abundance of native and cultivated grasses, and of stock water, render this county well adapted to stock growing. Thousands of cattle have been driven from here to Utah and California.

House-carpenters, masons, cabinetmakers, wagon-makers, coopers,

and farmers are much needed, and will find good openings for business.

There are several district schools in the county, also a college in Greenville, and an academy in Melville, both ably conducted, and promising to do great good. The principal religious denominations are Baptists, Methodists, Presbyterians, and Christians.

GREENFIELD, the county-seat, has a population of about 300, and **Dadeville**, 100. There is a newspaper published in Greenfield, and a good representation of business houses in the town.

DALLAS COUNTY.

This county is situated in the southwest central part of the State, bounded on the north by Camden and Hickory, south by Greene, east by Laclede and Webster, and west by Hickory and Polk Counties, and has an area of about 576 square miles. It is one of the new counties, and was formed from a portion of Polk. In 1850 it had a population of 3648; in 1856, 4620; and in 1860, 5914. The section now embraced in the county was first settled by J. H. Ross and others, in 1831.

Physical Features, Soil, etc.—Both the surface and the soil of this county are diversified. A portion of the county is level or undulating, and some parts quite broken. The prairies have generally a basis or "subsoil" of red clay, and upon experiment has proved to be well adapted to farming purposes. The timber-land is more rocky, but the soil is black and fertile, especially in the valleys. The ridges, which by many have been considered as barren and worthless, we find generally covered with wide-spreading arbors of native grape-vines, yielding largely of several varieties of wild grapes, which is conclusive evidence of their adaptation to grape and fruit culture. The timber consists principally of oaks, hickory, linn, maple, walnut, etc., etc. The county is drained by the Niangua River and its numerous lengthy, rapid tributaries.

Bryce's Spring, probably the largest in the State, is located near the Niangua, in township 34, range 18 west, near the line between Dallas and Laclede. "It rises in a secluded valley, where it forms a large basin, then flows away—a river." It is stated in the Geological Report that this spring discharges more than 126 cubic feet of water per second, 455,326 per hour, and 10,927,872 cubic feet per day.

(See description of this spring in Chapter on Natural Curiosities.) Lead ore has been found in several localities, and is worked upon township 29, range 19, and when the Pacific Railroad, southwest branch, is completed, affording a market, more attention will be given to mining as well as farming and stock growing.

Industrial Pursuits.—Of business houses and professions, there are in the county (principally in Buffalo) 1 newspaper, 2 lawyers, 3 doctors, 4 merchants, 1 druggist, 2 blacksmiths, 1 wagon-maker, 1 saddler, 1 tailor, 1 shoemaker, 1 cabinetmaker, 2 carpenters, and 3 hotels. There is 1 M. E. Church, with 50 members; and 23 free schools, besides the High School of Buffalo.

BUFFALO, the county-seat, is the principal town in the county. It has a population of about 200, a spicy newspaper, a high school, church, and many other indications of "the march of progress." Of other towns, there are **Lewisburgh** and **Andersonville**, with about 50 population each.

DAVIESS COUNTY.

This county is situated in the northwestern part of the State, bounded on the east by Grundy and Livingston, and on the west by De Kalb and Gentry, north by Harrison, and south by Caldwell County. It was first settled in 1831, and organized in 1835. In 1840, the population of the county was 2736; in 1850, 5295; in 1856, 7970; and in 1860, 9615.

Physical Features.—The surface generally undulating, and some portions nearly level—one-half prairie, the remainder hard-wood timber. Grand River traverses the center of the county, which, with its tributaries, Big Creek, Grindstone Creek, and Muddy Creek, afford excellent water-power. (See description of "Grand River Country.")

Soil fertile and well adapted to farming, grazing, and fruit growing. Corn, wheat, oats, and hay are the staple products.

Cultivated land is held at from $10 to $20 per acre, and uncultivated at $3 to $5. At a sale of swamp lands in this county several months since, the competition was so great that considerable of the land sold for $20 per acre, and the lowest price that any was sold for was $2 50—the average price being about $12 per acre.

GALLATIN, the county-seat, is pleasantly situated about one mile southwest from the west fork of the Grand River, in the midst of a

wealthy, well-tilled farming district, and contains a population of about 1000. There is in Gallatin 1 newspaper office, 1 church each of the Presbyterian, Methodist, and Baptist denominations, a Masonic Lodge, Academy, and a good representation of the different industrial pursuits.

Cravensville is situated on Grand River, four miles from Gallatin, contains 3 churches, Methodist, Cumberland Presbyterian, and Baptist, 1 woolen factory, 2 distilleries, and a number of stores, warehouses, hotels, etc. The town was originally settled by Mormons, in 1837 or '38, and the post-office established in 1840. Population about 250.

Pattonsburg is situated on Big Creek, three miles above its junction with Grand River, and seventeen miles from Gallatin; contains 1 M. Episcopal church, a Masonic Lodge, and 125 inhabitants.

Alta Vista, population 100; **Jamesport,** 80; **Salem,** 50; **Victoria,** 75.

DE KALB COUNTY.

This county is situated in the northwest portion of the State, bounded on the north by Gentry, south by Clinton, east by Daviess, and west by Andrew and Buchanan Counties. The county was formed from a portion of Clinton County, in 1841, and the post-office at the county-seat established in 1845. Population of the county in 1850, 2075; and in 1860, 5244.

Soils, Productions, etc.—The soils of this county are fertile and well adapted to the growth of hemp, corn, wheat, tobacco, etc. Hemp is regarded as the most profitable crop—yielding from 1000 to 1500 pounds to the acre, which cost $16 per acre to raise and prepare for market, and is worth $90 per ton ready for shipment. Small grains yield abundantly; horses, mules, cattle, and sheep, do well, and stock raising is profitable. Building stone, clay for bricks, and hardwood timber, abundant. The general surface is undulating, and diversified by prairies and woodlands. The Hannibal and St. Joseph Railroad passes through the southern border of the county, affording cheap and speedy transit to the best of markets, at St. Joseph, St. Louis, or Chicago.

MAYSVILLE, the county-seat, is situated east of the center of the county, upon the table-lands, between Livingston Creek, which bears south into the Platte, and Grindstone Creek, which runs north,

into Grand River. It contains 4 churches, Campbellite, Cumberland Presbyterian, Methodist, and Missionary Baptist—a Masonic Lodge, High School, and 350 inhabitants.

Stewartsville is a brisk new town, situated on the Hannibal and St. Joseph Railroad, twenty-one miles from St. Joseph; contains 1 newspaper office, 1 Methodist and 1 Presbyterian church, Masonic Lodge, and about 600 inhabitants.

Third Fork is situated upon a tributary of the Platte, of the same name, fourteen miles from Maysville, and is one of the oldest towns in the county, having been settled in 1837. It is connected by stage with Gentryville, 23 miles; Albany, 30 miles; Tolo, 15 miles, Rochester, 7, and St. Joseph, 21 miles.

DENT COUNTY.

This county is bounded on the north by Phelps and Crawford, south by Shannon, east by Reynolds, Iron, and Crawford, and west by Phelps and Texas Counties. It was formed out of the northern part of Shannon and southern part of Crawford, and named in honor of Frederick Dent, an early and respected citizen of the State. Reorganized, December 4, 1855, and in 1856 contained 3207 inhabitants, and in 1860, 5698.

Physical Features.—This county is centrally situated on the dividing ridge, miscalled the Ozark Mountains; as stated elsewhere, this ridge has few of the characteristics of a *mountain*. It is here a wide table-land, having an altitude of about 1000 feet above St. Louis. The top of the divide is formed of the 2d sandstone of the Missouri Geological Survey, and under this the 3d magnesian limestone. The stratum of sandstone is from sixty to 100 feet thick, and is covered with a yellow-pine forest. On the south side of the main divide and its branches, between the water-courses, are some extensive white-oak groves. "Pleasant Valley" is at the head of Maramec River—is principally prairie, interspersed with oak openings, with a good depth of clay over the sandstone, and soil generally productive. Gadsden valley is in the southern part of the county—is a range of upland country with oak openings and small prairies. Both timber and prairie lands are generally fertile—the former predominating. The timber consists of hickory, oak, black walnut, yellow pine, etc., of full size.

Minerals.—In the northern part of the county is an extensive specular iron field, and in the southern portion an extensive hematite iron bank, where veins are found in east and west crevices. In section 9, township 34, range 3 east, is the noted exposure known as "Copper Hill," in the vicinity of which several copper veins have been discovered; and there is every evidence of its being a rich copper mining district. Some of the most valuable iron deposits are owned by John Orchard, C. C. Zeigler, Wm. James, and others.

Antiquities.—Near the head waters of the Maramec, and in the valley, are hundreds of Indian mounds, stretching up and down the valley and laid off into regular squares. These were probably not erected as places of burial, but as a protection against water, for tent locations.

Industrial Pursuits.—In the county there are no newspapers, 4 lawyers, 3 physicians, 4 merchants, 2 druggists, 3 carpenter shops, 1 cabinet shop, 2 blacksmith shops, 1 wagon-maker, 1 saddler shop, 1 tailor shop, 2 shoemaker shops, 1 tin shop, 1 cooper shop, 3 saw-mills, 2 flouring-mills, and 2 hotels.

Farmers, capitalists, wagon-makers, cabinetmakers, saddlers, and intelligent industrious citizens of whatever avocation can here find good water, water power, timber, building materials, and good markets.

Churches and school-houses are more numerous than usual in a new country. Christian, Baptist, and Presbyterian have each good edifices—five church organizations. Society very good, people intelligent and enterprising.

Advantages.—This county possesses good soil, a healthy climate, abundance of water power, good pine, oak, hickory, and walnut timber, and immense beds of iron, lead, and copper. Good openings are presented for capitalists, miners, mechanics of all kinds, farmers and stock growers.

The Lake Spring Male and Female Academy is ably conducted and liberally patronized; has the best building in that region of country. There is also an excellent male and female academy at Salem.

SALEM, the county-seat, is situated in a high and moderately rolling country; has a brick court-house, churches, five stores, etc., and is destined to be a good business center for this section, especially when the mineral deposits are developed. Population about 200.

DOUGLAS COUNTY.

This county is situated in the south central part of the State, and was formed from the northern part of Ozark County, by an act approved October 29, 1857. In 1860 it contained 2461 inhabitants.

This new county embraces about 758 square miles, is generally sterile and broken, and a great portion of the land unfit for cultivation, and valuable only for the excellent pine, oak, and walnut timber that abound throughout the county. The principal streams traversing the county are the Big North Fork and Bryant's fork of White River, and their tributaries, upon which are found very good water power. There are already twelve saw-mills and eight flouring-mills, all by water power, furnishing lumber to a considerable extent for the northern and western counties. The soil and climate is well adapted to fruit and grape culture. Improved land is worth from $4 to $6 per acre; unimproved, sixty cents to $2. Corn, wheat, potatoes, turnips, rye, tobacco, and the usual varieties of grasses are profitably produced in the valleys. Of business houses in the county, there are (no lawyers!) 3 doctors, 7 merchants, 2 grocers, 1 tinner, 9 blacksmiths, 3 wagon-makers, 3 saddlers, 4 cabinetmakers, 8 carpenters, 2 coopers, and 2 tobacco manufacturers. More mechanics are wanted, and persons with energy and capital to engage in grape culture; and, above all, some good school teachers. There are 11,960 acres of school lands unsold in this county.

VERA CRUZ, the county-seat, is a thriving town, and contains about 60 inhabitants.

DUNKLIN COUNTY.

This county is situated in the southeastern part of the State, bounded on the west and south by Arkansas, and on the east by Pemiscot, which separates it from the Mississippi River and from Tennessee. It is traversed by Whitewater River, and watered by Lake Pemiscot, which bounds the lower part of the county on the east; also by the St. François River, which forms its western line, and by numerous lakes and ponds in various parts of the county. This county, together with several adjoining, was severely injured

by the earthquakes of 1811–12, since which time a great portion of it has been what is termed "swamp land." Many of these swamps can be reclaimed by drainage with but little expense, and will then be the most fertile lands probably in the State. The Legislature, in 1849–50, passed a bill, introduced by Hon. J. S. Huston, making an appropriation for the reclamation of the swamp lands of Southeast Missouri, but nothing of importance has been done toward it. There are some very good farms in the county, and the soil is everywhere very fertile.

According to the Surveyor-General's Report, the swamp land in this county is greatly over-estimated, there being several portions of it laid down in his survey as lakes which are now among the best farms in the county. Whether this has been an error in his report, or that by some natural causes these lakes have become dry land, is a question.

Grand Prairie and West Prairie are fertile and beautiful. However, the location is not considered a healthy one.

Dunklin County embraces an area of about 700 square miles; was first settled by Jacob Taylor and others in 1829; had in 1850 a population of 1232, and in 1860, of 4689.

Business Statistics.—There are in the county, 3 lawyers, 16 doctors, 8 merchants, 8 grocers, 12 blacksmiths, 3 wagon-makers, 7 carpenters, 3 saw-mills, 4 flouring-mills, and 1 hotel.

Churches and Schools.—1 New School Presbyterian congregation of 75 members; Methodist, 350; Baptist, 350. Of schools, there are 15, situated in various parts of the county, with about 650 pupils. The amount appropriated as school fund for this year is $928 74.

KENNETT, the county-seat, has a pleasant situation, fair business prospects, and a population of about 50. It was laid out in the year 1845.

Hornersville, a thriving town, has 100 inhabitants.

Four-Mile, a population of 50.

FRANKLIN COUNTY.

This county is situated on the south side of the Missouri River, which forms its northern boundary. The county is separated from the Mississippi by St. Louis and Jefferson Counties, which form its eastern boundary. In 1860 it contained a population of 18,124.

Physical Features.—The surface of this county is broken, consisting chiefly of ranges of hills elevated from 100 to 300 feet above the level of the adjacent streams, and often separated from each other by deep valleys—some of them very narrow, others wide. The general direction of the main ridges are northeast and southwest. In the southern part the county is very uneven. There are numerous rapid-running streams affording an abundance of water, the most important being the Missouri, Maramec, Bourbeuse, St. Johns, Bœus, and Berger. The Maramec meanders through the county, is exceedingly tortuous, and in many places quite rapid. Its bottoms are in some places wide and fertile. Again, the stream is confined between hills having an altitude of 300 feet, which rise almost perpendicular from the water's edge. The characters of the Bourbeuse valleys are very similar to those of the Maramec.

Franklin is one of the best-timbered counties in the State, and there is but one small prairie in the whole county.

Mineralogical Wealth.—This county is far richer in its mineral than agricultural resources. There are about thirty lead mines in the county, and four Scotch hearth lead furnaces. These mines are situated principally in townships 41 and 42, ranges 1 and 2 west. There are five localities in townships 40 and 41, ranges 1 and 2 east, where gray sulphuret and green carbonate of copper are found in considerable quantities. Brown hematite iron ore is found in several places in the southeast part of the county, principally in townships 41 and 42, ranges 1 and 2 east. This mineral region is traversed by the southwest branch of the Pacific Railroad, and by the Maramec River, affording superior facilities for taking the mineral to St. Louis.

At the Virginia and Mount Hope lead mines are both north and south vertical veins. The former has yielded upwards of 10,000,000 pounds of ore, the latter about 5,000,000 pounds. This ore has been taken from the top of these veins, and is evidently but a small portion of what the mines contain in the rock below the water line. Several other north and south veins have been discovered and worked.

Ore is also found in horizontal veins in the rock, and in unstratified veins in the clay. Fully one-half of this county is a lead field, and ore may be looked for, in workable quantities, in almost every section of land throughout this part of Franklin County.

History.—The first court held in this county was on the 1st of January, 1819. Frederick Bates, Secretary of the Territory, and exercising the government thereof, appointed Benoni Sappington Sheriff, and Joseph Reeves and James Higgins, Justices of the Peace. The court was held at the residence of Hartley Sappington, a short distance above Washington. On the sixteenth of April, Governor William Clarke resumed the gubernatorial chair. On March 8, 1819, Wm. Laughlin, David Edwards, and Thomas Buckner, who had been appointed by an act of the Legislature to lay off the county and fix the seat of justice, were sworn in. Isaac Murphy was appointed to keep a ferry on the Missouri, and gave $500 bonds to pass horses at fifty cents each, and foot passengers at twenty-five cents. Edward Simon was appointed to keep a ferry over the Gasconade at half the above rates. Thomas Henry was appointed Surveyor, and ordered at this term to run the lines of the county. The county-seat was formerly at New Port, which was situated on the high bluffs, about a mile from the Missouri, near the mouth of the Bœuf River. The seat of justice was removed to Union about the year 1830.

The **Soil**, along the bottoms of the larger streams and upon some of the uplands, is susceptible of a high state of cultivation; and although it has generally been considered a poor farming region, there were, in 1850, in this county, 1096 farms under cultivation.

Industrial Pursuits.—The following branches of business are represented in this county to the extent named, principally in Washington and Union: 1 newspaper, (Weekly Advertiser,) 1 academy, 1 bookstore, 12 attorneys, 12 physicians, 2 dentists, 3 surveyors, 2 bankers, 22 general stores, 5 family groceries, 2 druggists, 1 hardware store, 1 crockery store, 2 millinery stores, 3 tin and stove stores, 4 agricultural stores, 7 brick-yards, 1 rope-walk, 3 carding machines, 1 distillery, 2 breweries, 2 potteries, 1 soap and candle manufactory, 2 tanneries, 2 broom manufactories, 8 tailor shops, 2 bakeries, 16 shoe shops and stores, 3 saddler shops, 7 saw-mills, 4 flouring-mills, 12 carpenter shops, 5 cabinet shops, 4 jewelers, 14 coopers, 3 nurseries, 12 blacksmiths, 10 wagon shops, 4 tinners, 8 painters, 10 hotels, 2 livery stables, 2 warehouses, 4 gunsmiths, 2 auctioneers, 6 butchers.

UNION, the county-seat, is situated on the Bourbeuse River, in the north central part of the county, ten miles from Washington, seventy-

five from Jefferson City, and fifty-five from St. Louis. First settled about 1829. Present population, 500.

Washington, the commercial point and most important town in the county, is situated upon a beautiful site sloping back from the Missouri River and Pacific Railroad, overlooking the valley. It is seventy-one miles from Jefferson City and fifty-four from St. Louis by railroad, and ten from the county-seat by stage. Here are four churches—Catholic, Presbyterian, Lutheran, and Methodist—one Lodge each of Masons and Odd Fellows, one ladies' high school, etc. Population about 1200.

Pacific (formerly called Franklin) is situated at the junction of the Pacific Railroad and the southwest branch of the same, thirty-seven miles from St. Louis, eighty-eight from Jefferson City, and eighteen from the county-seat. It contains 1 Catholic Church, 1 Masonic Lodge. Population 300.

Warrensville is situated on the southwest branch of the Pacific Railroad, seven miles from Franklin, and fourteen from Union. The town is supplied with water from one of the finest springs in this part of the State, which affords water power sufficient to propel mill machinery. Population 125.

Boone is situated thirty miles from Union, contains a Baptist Church, two mills, several stores, etc. Population 150.

Gasconade, on the Gasconade River; **Galls Prairie, Mount Stirling, Leander, Owensville,** and **Canaan,** in the central; **Delphi, Bem, Oak Hill,** and **Jakes Prairie,** in the southern portion of the county, are each worthy of note.

GASCONADE COUNTY.

This county is situated on the right bank of the Missouri River, and next west of Franklin, (last described,) to which, in many respects, it is quite similar.

Physical Features.—The north and east half of this county is hilly and broken, and in some places bald flint-hills or knobs occur, which are entirely destitute of timber, and unfit for cultivation. Lead ore is reported to have been found in some of the "flint ridges." The valleys are very fertile, and a number of superior farms, of bottom land, are under a good state of cultivation. The prairies are small, dry, and fertile. This county is washed on the north by the Missouri

River; the interior is watered by the Gasconade and its numerous tributaries, together with those of the Maramec, Bœuf River, and several smaller streams. Upon the Gasconade and Bourbeuse are good sites for mills, and excellent water-power improvement.

Antiquities.—There are a number of saltpeter caves along the banks of the Gasconade, which were profitably worked several years since. Some of the saltpeter was shipped down the river, to St. Louis, but the greater portion was used in the manufacture of gunpowder, of which there were at one time a number of manufactories in the State. Some of these caves are large and interesting, consisting frequently of a succession of rooms joined to each other by arched halls of a considerable height, with walls of white limestone, upon which as well as upon the floors the saltpeter is deposited, and is generally so pure as to need but one washing to prepare it for use, or export.

In his excellent and interesting Gazetteer, published in 1823, Professor Beck says: When these caves were first discovered, it was not unusual to find in them Indian axes and hammers, which led to the belief that they had formerly been worked for some unknown purpose by the savages. It is difficult to decide whether these tools were left here by the present race, or by another and more civilized, which preceded them. Although it is unusual for savages in our day to take up their residence in caves—considering these places to which the *Monitcau* resorts—although they are not acquainted with any of the uses of the saltpeter, and would rather avoid than collect it, the circumstance of finding these tools in the caves would, of itself, perhaps permit slight evidence that the country of the Gasconade was formerly settled by a race of men who were acquainted with the uses of this mineral, or who exceeded them in civilization, or in the knowledge of the arts. But there are other facts connected with these about which there can be no mistake; near the old saw-mills, and at a short distance from the road leading from them to St. Louis, are the ruins of an ancient town. It appears to have been regularly laid out, and the dimensions of the squares and streets and some of the houses can yet be discovered. Stone walls are found in different parts of the area, which are frequently covered by huge heaps of earth. Again, a stone work exists, as I am informed by General Ashley, about ten miles below the mills. It is on the west side of the Gasconade, and about twenty-five to thirty feet square; and although at present in a dilapidated condition, appears to have been originally built with an uncommon degree of regularity. It is situated on a high, bold cliff, which commands a fine and extensive

view of the country on all sides. From this stone-work is a small footpath, running a devious course down the cliff, to the entrance of a cave, in which was found a quantity of ashes. This path, communicating with the sacred cave, shows that the temple may have been erected to some imaginary deity.

Schools.—The citizens of Hermann contributed about $12,000 for the purpose of establishing a good school in the town, and two good teachers are paid from the interest of this fund. Besides the 2 in Hermann, there are some 40 district schools in various parts of the county. The amount of State school money appropriated for 1859, for this county, is $2331 51.

Farm Products.—This county is principally settled by Germans, who devote more attention to grape culture than to farming. There are large tracts of land occupied by well-cultivated vineyards, especially in the vicinity of Hermann, and we are assured that grape culture and wine making is more profitable than any other branch of agriculture or horticulture.* Crops are generally good; for instance, farmers raise, per acre, of corn, 100 bushels; wheat, 25 to 30; tobacco, 1500 pounds; oats, 30 bushels; barley, 40 to 60 bushels. Of barley, this county exported about 300,000 bushels in 1858, at an average price of 80 cents per bushel. Buckwheat, hemp, and flax also do well. Those who have tried the Chinese sugar-cane have succeeded very well. One farmer made several barrels of sirup, which he sold at 80 cents per gallon. In the eastern part of the county, stock raising has been profitably pursued. Cultivated farms can be purchased at from $5 to $30, according to locality, and unimproved land, at from $1 to $15 per acre.

History and Business Statistics.—Gasconade was severed from Franklin in 1820, and was first settled by Isaac Perkins, John Pryor, and Owen Shockley. In 1840, the county had a population of 5330, and in 1850, it had decreased to 5000. The population in 1860 was 8594.

HERMANN, the county-seat, occupies a charming site on the Missouri River, and the Pacific Railroad, forty-four miles from Jefferson City, and eighty-one from St. Louis. The trains on the Pacific R. R. stop here to dine, and Mr. Leiman's excellent Dining Hotel has rendered this a point of some interest to travelers. The town, as its name indicates, is inhabited principally by Germans. It was settled in 1837,

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* There are annually produced from these vineyards from 15,000 to 100,000 gallons of wine, (owing to the season,) which sells readily at from $1 25 to $2 00 per gallon. (See chapter on Grape Culture.)

by the "German Settlement Society" of Philadelphia The principal business of Hermann and its vicinity is fruit growing, and especial attention is given to the culture of grapes, and a large quantity of wine of the finest quality is manufactured here. Peaches, pears, etc. also claim the attention, and yield well. Messrs. Husmann & Manwaring exhibited thirty-four varieties of the grape at the Agricultural Fair, in 1860, and ten bunches of the Catawba variety weighed eleven pounds. This place has 1 newspaper—the "Volksblatt," (German,) a Catholic and Protestant Church, a County Savings Institution, 2 Masonic Lodges, a fanning-mill manufactory, a nursery, 3 hotels, 1 steam flouring-mill, 3 lawyers, 12 physicians, 15 merchants, 12 grocers, 2 druggists, 2 silversmiths, 3 tinners, 20 blacksmiths, 5 wagon-makers, 2 saddlers, 8 tailors, 18 shoemakers, 8 cabinetmakers, 15 carpenters, 6 coopers, etc. Population about 2000.

Calvy, Moselle, Iron Hill, St. Clair, and **Stanton,** on the southwest branch of the Pacific R. R.; **Port Royal, St. Albans, South Point, Bassora,** and **New Port,** on the Missouri River; and **Beauford,** 60 miles west of **Union,** the county-seat, are all places of some business and enterprise.

GENTRY COUNTY.

This county is situated in the northwestern portion of the State, bounded by the Iowa State line on the north, and separated from the Missouri River on the west by Nodaway and Atchison Counties. Population of the county, in 1860, was 12,043.

Physical Features, Soil and Productions.—The face of the country is undulating, diversified with prairie and timber, and well watered by Grand River and its tributaries. Indications of rich beds of copper, and of an excellent quality of bituminous coal have been found, but no banks or mines opened yet. The soil is very fertile, and well adapted to the production of all grains and grasses suitable to this climate. The largest yield we have heard of in the county is, of hemp, 1200 pounds per acre; tobacco, 1200 pounds; corn, 120 bushels; wheat, 20 bushels; rye, 50; oats, 65; buckwheat, 50; potatoes, 300; timothy, 2 to 3 tons; Hungarian grass, 4 tons. Mr. J. Allen, an enterprising farmer produced corn, some ears of which were fifteen inches long and eight inches in circumference. His crop was plowed twice, and received no further cultivation. The quantity and quality of fruit and vegetables produced is very satisfactory to farmers

and fruit growers. The farmers in the county set out upwards of 15,000 fruit trees, and a vast amount of evergreens and shrubbery, last year, and are adding annually to their orchards.

History.—This county was first settled in 1840 by persons from Clay and Ray Counties. The county-seat was formerly named Athens, and although the name was changed to Albany by the Legislature, at its next session after the town was incorporated, the county-seat is still called Athens on many of the maps since published.

Of **Business Houses** in the county there are 7 lawyers, 1 newspaper, 24 stores, 2 groceries, 3 drug stores, 1 silversmith, 1 tin shop, 10 blacksmith shops, 6 wagon shops, 2 saddler shops, 2 cabinet shops, 100 carpenters, 3 cooper shops, 12 steam and 5 water power saw-mills, 5 steam and 5 water power flouring-mills.

Churches and Schools.—There are ten churches in the county—Presbyterian, O. S., 100 members; N. S., 100; Methodist, about 500 members; Baptist, 600; Christians, 600 members. The school statistics show that since 1856 the number of school-houses and number of teachers employed, and number of children entitled to attend district schools, have more than doubled, while the liberality manifested by the erection of good school-houses and churches is truly commendable. A high school is taught in Albany by Rev. J. N. Young, and bids fair to become an institution of importance to that section of country. Within the past two or three years, new schools, with latest arrangements for the studio, have been opened, and school-houses, at an average cost of $600 or $700, have been erected, and the teachers number among their ranks the polished students of Southern and Eastern colleges.

Number of districts in Gentry County		77
"	male children	2527
"	female children	2239
"	males taught	1380
"	females taught	1105
"	school-houses	57
"	male teachers	53
"	female teachers	14
Amount paid to teachers in 1859		$4987 42
"	derived from State common school fund	2395 24

According to the assessor's returns for 1859, there were in the county 407,430 acres of land, subject to taxation, valued at $1,832,500; 89 slaves, valued at $42,925; with the total value of taxable property, $2,397,070.

The natural advantages possessed by this county are a fertile soil,

healthy location, plenty of good timber, with prairie and range for cattle, and "mast" for hogs; water power, building stone, stone coal, and prospects of finding rich beds of copper ore. Unimproved lands sell at from $4 to $12 per acre for timber, and $2 to $7 for prairie; and improved lands at from $8 to $20 per acre. Capitalists, merchants, farmers, mechanics, and honest, industrious men of all classes can do well in Gentry County.

ALBANY, the county-seat, is situated about one mile east from Grand River, has a population of about 600 inhabitants, and is growing rapidly. Among the most important institutions may be named 1 high school, a Masonic Lodge, 2 churches, 7 general stores, 2 drug stores, 2 steam flouring and saw mills, 2 hotels, 1 newspaper, (Albany Courier,) and a good representation of mechanics, professional men, etc.

Gentryville is situated upon Grand River, and her location for beauty and eligibility is second to none in the county, being surrounded by some of the oldest and best farms and farming lands that Gentry can afford. This town has recently been incorporated, and bids fair to become a place of importance. Population about 300.

Of other towns, there are **Fairview**, population 75; **West Point**, 75; **Allensville**, 100; **Smithton**, 50; **Matthew's Grove**, 30; and **Havana**, 30.

GREENE COUNTY.

This county is situated in the southwestern part of the State, bounded on the north by Polk, east by Webster, south by Christian, and west by Dade and Lawrence Counties. This county was first settled by John P. Campbell, Robert Patterson, and William Fullbright. In 1860 it contained a population of 13,247.

Physical Features.—This county is, topographically speaking, higher than any of the adjacent country, and the streams are all clear and rapid. The general face of the country is undulating, and some portions broken or hilly. The prairies are large, rich, and beautiful, skirted by timber along the streams, and in small groves. Occasional "barrens" intervene, which are stony and sparsely timbered. Timber is not very abundant, but there is sufficient for all practical purposes. The high ridge erroneously named Ozark Mountains extend through this county. (See Topography of Ozark Mountains, in another chapter.) The southern part of the county is traversed by important

branches of White River, and the northern portion by the Osage River, while large springs of clear, cold water are abundant, several of which break forth from fissures in the rocks, and are of sufficient capacity to propel machinery for saw or grist mills, and are not affected by wet or dry seasons.

Soil, Productions, etc.—Although the soil of the county is not as deep and fertile as in some portions of the State, this is considered a good agricultural district, and is well adapted to the culture of all kinds of cereals, grasses, and produces an abundant yield of fruit of every variety. There is not perhaps in the State, if anywhere, a region of country better adapted to grape culture than this; and the gravelly ridges that are now entirely neglected, called "the barrens," contain all the elements to insure success in vine growing, and, with proper management, would yield a greater profit than many of the farms that produce twenty-five bushels of wheat to the acre. The wild grape that grows here so abundantly is much larger and better flavored than in more northern latitudes, which would indicate that both the soil and climate are favorable to the grape. Peaches grow large, and seldom fail; while apples, pears, and all other varieties of fruit yield well. Considerable attention has been given to the introduction of Chinese sugar-cane, which yields well, but the flavor of the sirup is not considered equal to that of the Southern cane, and but little will be raised. Corn is the staple product, but wheat, oats, tobacco, and some flax and cotton are produced. The crop of tobacco last year exceeded 250,000 pounds, which was sold at from seven to twelve cents per pound, in the leaf; and as most of it is manufactured at the four tobacco manufactories in the county, (whose sales exceed $50,000 annually,) the profits from both its culture and manufacture remain in the county.

Springfield Land District.—One of the most important land offices in the State is located at Springfield.

There yet remains unsold in Springfield land district about 3,000,000 of acres of land, a large portion of which is mountainous, but well adapted for pasture and for the cultivation of the grape.

Stock Growing.—As the following figures will show, this is one of the most important branches of industry pursued in this county. In 1858 there were upwards of 1000 yoke of oxen sold from this county, principally to the Santa Fe and Utah freighters, at from $75 to $85 per yoke; and of horses and mules nearly 1400, principally to the cotton fields and sugar plantations of Mississippi, Louisiana, and Texas, at an average price of $140, amounting to some $300,000. During the first half of the year 1859 upwards of 7000 head of

steers were driven to the one point, Independence, and sold at prices making an aggregate of $400,000, and a net profit to the owners of say $220,000—costing about $30 per head, and selling for $68. Large numbers have been driven to St. Louis besides the above. Of horses, mules, sheep, cows, and calves, the sale is also large, but we have not the statistics. Suffice it to say that this is one of the best grazing counties in the State.

Inducements to Immigration.—Men of large capital can find here chances for profitable investment, while the honest, industrious mechanic with small means will find opportunities to increase them. Hundreds and thousands of acres await the farmer's plow, and the demand for sober, energetic mechanics is very good. There is no portion of the State where industry commands a more certain reward. The variety of soil, mild and healthy climate, advantageous natural position, and certain market, at good prices, for all the farm products, and of remunerative wages for all kinds of labor, are inducements which those seeking a permanent home in Missouri should not overlook.

Churches and Schools.—The Methodist E. Church, Christians, Baptists, Cumberland Presbyterians, Reformed Methodists, O. S. and N. S. Presbyterians, each have churches that are well attended in the county. Of high schools there is one for females, and a male and female college where both sexes are taught, with a creditable number of other schools in the county.

Newspaper History.—The first newspaper in Greene County was published in 1839 by Cyrus Stark and E. D. McKinney, called the Ozark Standard. This was succeeded in 1840 by the Ozark Eagle, published by R. A. Hazzard, now of Jefferson City. In 1844 the Springfield Advertiser was commenced by W. H. Graves. This paper has been continued to this time by W. H. & A. C. Graves. In 1846, the Texas Democrat was started by E. D. McKinney. This was followed by the Springfield Whig in 1847, published by C. E. Fisher, which was removed to Osceola and there published by C. E. Fisher and E. C. Davis as the Osceola Independent. In 1849, John M. Richardson started the Southwestern Flag, which was published until 1852, and then changed to the Democratic Lancet by Joshua Davis. In the spring of 1854, Mr. James W. Boren commenced the publication of the Springfield Mirror, which is still continued by him.

SPRINGFIELD, the county-seat, is pleasantly and advantageously situated near the center of the county, surrounded by a wide expanse of fertile, agricultural land, bounded on the west and south by two large, rich prairies, divided into numerous well-cultivated farms. The

buildings are neat and substantial, especially some of the public buildings, among which the Court-house and Methodist Church are two of the finest buildings outside of St. Louis—the latter having been built at a cost of $15,000. The streets are wide, and the numerous shade trees add much to its beauty and healthfulness. Springfield was incorporated as a city, December 13, 1855, and now contains a population of about 2000.

There are in Springfield 2 newspapers, 1 banker, 20 lawyers, 22 physicians, 29 merchants, 4 druggists, 3 silversmiths, 2 tinners, 13 blacksmiths, 6 wagon-makers, 2 saddlers, 4 tailors, 5 shoemakers, 4 cabinetmakers, 25 carpenters, 5 tobacco manufacturers, 1 steam and 4 water power saw-mills, 1 steam and 7 water power flouring-mills, 3 hotels, etc., besides manufactories of farming implements, and tanneries.

Ozark, situated fourteen miles south from county-seat; 400.

Linden, fourteen miles southeast; 300.

Ebenezer, ten miles west; 150. At Ebenezer there is a fine school.

Distance from Springfield to Syracuse, on Pacific Railroad, 130 miles; to Jefferson City, 130; St. Louis, 230.

GRUNDY COUNTY.

This county is situated in the north part of the State, about midway between the Mississippi and Missouri Rivers, and separated from the Iowa State line by Mercer County, which bounds Grundy on the north. In 1860 it contained 8202 inhabitants.

Physical Features.—The general character of this county is undulating or rolling. It is very well watered by the tributaries of Grand River. The table-lands and divides are generally prairie, and the streams are skirted with timber, affording sufficient for fencing and fuel. The soil is very good and well adapted to all farming purposes. Of this the reader will find a more full description in the chapter on the Grand River Country. Turnips have been raised in this county by Mr. Osborn, which, after being closely trimmed, weighed eleven pounds and three ounces; and James Wynn has produced corn, one ear of which contained 1383 grains, all well filled; and a radish weighing four pounds and three ounces. Mr. Isaac Froman raised in one season, upon a piece of ground two feet by fifteen, first ten bushels of onions, and afterward eight bushels of turnips.

Churches and Schools.—The Methodists, Presbyterians, Baptists, Christians, and Reformers, each have congregations. The county has good schools supported by the public fund; also the Grand River College opened September 2, 1850, which is a flourishing and well-supported institution.

Farmers will find good farming lands at very low figures. Mechanics and machinists are wanted to establish in this county. Excellent water power and good localities for saw and grist mills. Capitalists who wish to invest in the best lands at the present low figures, and let them remain uncultivated, are not wanted. Men of energy and industry, from whatever country or clime, will receive a hearty welcome, and cannot but reap a rich reward for their labor.

TRENTON, the county-seat, is pleasantly situated upon the upland, on the east side of Grand River, and bids fair to become a town of importance. It was incorporated February 27, 1857, and contains a population of about 900.

Edinburgh was first settled in April, 1851, is situated on the west side of Grand River, some seven miles from Trenton, and owes its existence principally to the success of Grand River College. Population 200.

Lindlay contains a population of 200.

Nevada, a population of 75.

Nearest point to railroad is at Chillicothe, which is twenty-one miles from Trenton. These towns are generally well supplied with business houses.

HARRISON COUNTY.

This county is situated in the north-northwestern part of the State, bounded on the north by the Iowa State line, south by Daviess County, east by Mercer and Grundy, and west by Gentry County. Area 750 square miles. Population in 1860, 10,646. First settled in 1837 by Wm. Mitchell, Jno. Conditt, and Reuben Macey.

Physical Features.—The northeast part of the county is traversed by the Crooked Fork of Grand River, and Big Creek, an affluent of Grand River, traverses the middle of the county from north to south. Besides these, the county is traversed by Sugar, Cypress, and Samson Creeks. The surface of the county is principally prairie, but in some instances broken. The timber is mostly confined to the mar-

gins of water-courses, and consists of white, black, pine, and bur oak, walnut, sugar-tree, maple, linn, sycamore, birch, cherry, cottonwood, hackberry, ash, hickory, etc., which skirt the streams and stand here and there in groves. The soil is generally fertile, and has in some instances produced per acre, of tobacco, 1000 pounds; flax, 500 pounds; corn, 85 bushels; wheat, 30 bushels; rye, 40 bushels; oats, 40 bushels; buckwheat, 50 bushels; potatoes, 250 bushels; onions, 100 bushels; beets, 150 bushels; carrots, 100 bushels; turnips, 100 bushels; timothy, 2 tons; Hungarian grass, 3 tons; and an abundant yield of fruit and grasses. Chinese sugar-cane thrives well, and large quantities of molasses and sirup are made for home consumption and for exportation. There are 15 saw-mills and 3 flouring-mills on Grand River and Big Creek. There is other fine water power on these streams unimproved. There are good State, county, and neighborhood roads through the county.

Churches and Schools.—The Presbyterians, Methodists, Baptists, Episcopalians, and Christians each have places of worship in this county. There are 80 free schools, besides several fine high schools for both sexes.

Inducements to Immigration.—Rich soil, good timber, healthy climate, clear rapid streams, and good demand for all articles produced. Fine country for stock growing.

BETHANY, the county-seat, is a thrifty, healthy town, situated about a mile east of Big Creek, in the center of a beautiful and fertile country. The town was first settled by Tennesseeans in 1845, and now contains three churches—Christian, Methodist, and Baptist—a Masonic Lodge, High School, steam saw and grist mill, two hotels, a variety of stores, mechanics, etc., and 600 inhabitants. To the east and north of Bethany there is a vast body of timber sufficient to supply it for coming ages. On the west there is one vast and boundless prairie, which extends far beyond the reach of the eye, nearly all of which is yet unsettled. From Bethany to Hamilton, on Hannibal and St. Joseph Railroad, 42 miles, to St. Joseph, 65 miles.

Trail Creek is situated on the upland, between Trail and Panther Creeks; contains a Methodist Church, steam saw and grist mill, several stores, etc. This place is the residence of Hon. J. T. Craig, U. S. Senator, Jas. McFarran, State Senator, and James Nevil, representative. Population about 300.

Eagleville is a new town, on Shawnee Creek, sixteen miles from Bethany; was first settled in 1842, but the town is of more recent origin. Here are 1 Baptist, 1 Christian, and 2 Methodist Churches,

2 hotels, 4 steam saw-mills, 2 grist or flouring-mills, broom manufactory, several stores and other business houses. Population 150.

The population of the following towns are stated to be: (?) **Cainsville**, 125; **Snellsville**, 25; **Martinsville**, 30; **Mt. Moriah**, 50; **Mitchellsville**, 30; **Harrison City**, 35; **Akron**, 25.

HENRY COUNTY.

This county, formerly called *Rives*, is situated in the western part of the State, bounded on the north by Johnson, east by Benton, south by St. Clair, and west by Bates and Cass, which separates it from the Kansas line. The first settlements in this section were made in 1831. The name was changed from Rives to Henry in 1841. The population of the county in 1850 was 4052; 1856, 6642; and in 1860, 9865.

Physical Features.—The face of the country is undulating; neither level nor broken. There is about one-third timber and the remainder prairie. The timber consists of oak, hickory, walnut, linn, etc. The early settlers hesitated about settling upon the larger prairies, on account of the lack of timber for fuel; but there have since been found extensive banks of excellent coal, and all objections are removed. So in many parts of this State, it will be seen that where a superficial examination indicates the absence of some important native element of wealth, deep research and thorough investigation generally prove the existence of hidden treasures which more than compensate for the seeming deficiency. The county is watered by Grand River and Big Creek, Deepwater in the western and Thibault (pronounced Tebo) and its sixteen tributaries in the eastern part of the county. Nearly all of these streams have very fine mill sites upon them.

Soil and Productions.—The soil is very fertile, and well adapted to all farming purposes. Some farms have yielded of hemp, 800 pounds to the acre; tobacco, 1600; flax, 2000 pounds, (in the straw;) corn, 80 bushels; wheat, 35 bushels; rye, 40; barley, 30; oats, 50; buckwheat, 50; potatoes, 250; onions, 320; beets, 320; carrots, 320; turnips, 500; timothy, 8000 pounds; clover, 2000 pounds; Hungarian grass, 8000 pounds, etc.; with an abundance of all kinds of fruit. Unimproved lands are worth from $2 50 to $8; and improved, from $5 to $25. This county is very well adapted to stock growing, as timothy, blue-grass, clover, and native prairie grass grow finely. Here are good openings for farmers, mechanics, and capitalists. Stone coal

and iron ore are the only minerals of any practical value in the county.

Churches and Schools.—There are 17 churches in the county. Of schools, there are 55 district schools and 2 private. The High School at Clinton, and Male and Female Academy at Calhoun; the latter was incorporated in 1855. Both these schools are well conducted and liberally patronized.

The Osage Valley and Southern Kansas Valley Railroad, now in course of construction, will pass directly through the county-seat, and secure to the citizens of the county an outlet to market which they have long needed.

CLINTON, the county-seat, is situated on Grand River, which flows through the county from the northwest to the southeast corner. It contains one Methodist Church, a newspaper, (the Clinton Journal,) one Masonic Lodge, brickyard, steam flouring-mill, two hotels, High School, several stores, mechanics' shops, etc. Population about 300.

Calhoun is on Thibault Creek, twelve miles from Clinton, contains a Male and Female Seminary, Masonic and Good Templars' Lodges, one church, carding machine, two hotels, several stores and shops, and about 350 inhabitants.

Shawnee Mound is on Henry Creek, twelve miles from the county-seat, and first settled in 1850, by A. D. Gillespie and others. Here are four churches: Presbyterian, Methodist, Baptist, and Christian. Population 50. This is in the center of a rich farming district.

Of other towns, there are **Bellemont,** population 100; **Leesville,** 100; and **Germantown,** 30.

HICKORY COUNTY.

This county is situated near the center of the southwest quarter of the State; bounded on the north by Benton, south by Polk and Dallas, east by Camden and Dallas, and west by St. Clair County. Contains an area of nearly 400 square miles; had a population in 1856 of 3312; in 1860, of 4820.

Physical Features.—The land is generally fertile, undulating, and in some places broken, with about an equal amount of prairie and timber land. In this, as in most other counties in the State, the forests are growing up rapidly since the Indians have been driven away, and the annual fires kept out. But little attention has been paid to the culture of grapes, hemp, flax, or tobacco. An average

crop of wheat is about 30 bushels to the acre; corn, 100 bushels; rye, 25, (very little raised;) oats, 30; buckwheat, 12 to 15; potatoes, 50 to 60; turnips, 300. Timothy, clover, and Hungarian grass do well. There is water power on the Niangua and Pomme de Terre, but is unimproved. Lead is found in various localities, but no attention paid to mining. Unimproved land worth about $3; improved, $8 to $10.

Churches and Schools.—The county contains 3 churches—1 each of New School Presbyterian, Methodist, and Baptist. There are 28 public schools located in the different townships, and of 1435 children, between 5 and 20, there were but 696 taught, in 1857. Amount of school money apportioned to this county in 1859, $1190 65.

HERMITAGE, the county-seat, is situated near the center of the county, east of the Pomme de Terre River, upon a pleasant and commanding location. The place was first settled in 1843, and now contains a Methodist Church, steam flouring-mill, steam saw-mill, 2 hotels, and numerous stores, shops, etc. Population about 125.

Quincy is on the Syracuse and Springfield Stage route, about midway between the two points, sixty-seven miles from Syracuse, and eleven miles from the county-seat. It contains a church, Masonic Lodge, woolen factory, flouring-mill, 2 hotels, etc. Population 150.

Preston, (Black Oak Point Post-Office) is six miles from Hermitage. Population 75.

HOLT COUNTY.

This county is one of the six that compose the Platte Purchase. It is situated near the extreme northwestern part of the State, bounded on the east by Nodaway River, which separates it from Andrew and Nodaway Counties, on the north by Atchison, (which extends to the Iowa State line,) and on the west and south by the Missouri River, and contains an area of 470 square miles.

History.—This county was first settled in 1835, by Joseph Kenzie, James Miller, and Dr. G. B. Tharp, from Tennessee, Colonel Kelly, from Virginia, and S. C. Collins, from Indiana. It was named in honor of Dr. Holt, a former member of the Legislature. Population in 1850, 3955; in 1856, 5404; in 1860, 6590.

Physical Features, Soils, and Productions.—The general surface

of the county is undulating—prairie and timber about equal. It is watered by the Nodaway, Big and Little Tarkeo, Mill Creek, Kenzie Creek, Davis Creek, and numerous springs throughout the county. Bank's Big Spring, on section 29, township 16, range 38, two miles west from Oregon, has a capacity sufficient to propel machinery. The Missouri bottom varies in width, from three to ten miles, and is exceedingly fertile, being an alluvial formation, and the soil in some places is twenty-three feet deep. The prairies are also exceedingly fertile. Taking the county at large, it is adapted to the production of all kinds of grain, grasses, fruit, and vegetables, that are cultivated in this latitude. There has been produced, several seasons in succession, of corn, 125 bushels to the acre; hemp, 1500 pounds; oats, 40 bushels, etc. In the season of 1859 there were 1900 bales of hemp shipped from Forest City. Hemp is the most profitable as well as most certain crop, and the farmers seem inclined to devote their farms to the culture of hemp and tobacco, and the raising of stock.

Industrial Pursuits.—There are in the county two newspapers, (Holt County News and Forest City Monitor;) lawyers, 9; physicians, 7; merchants, 44; druggists, 3; carpenter shops, 5; jewelers, 2; gunsmiths, 2; blacksmiths, 2; wagon shops, 4; saddler, 1; tailors, 4; shoemakers, 5; tinners, 2; cooper, 1; carding machine, 1; steam saw-mills, 6; steam flouring-mill, 1; water saw-mills, 7; water flouring-mills, 5; hotels, 5.

Inducements to Immigration.—A correspondent of the Republican writes: "Between the Missouri and Nodaway Rivers is a high rolling prairie, dotted by numerous groves of timber—as healthy, fertile, and beautiful country as is to be found on the globe." The inhabitants are generally intelligent, industrious, and contented. The county is settling up rapidly, and is soon to receive a new impetus by the completion of the Platte County Railroad. Industrious, skillful farmers, coopers, wagon-makers, carpenters, and merchants are needed. Saddlers will here find one of the best openings in the State.

Schools.—Teachers who are well qualified and wish to enter the field in earnest will here find an ample scope for labor, and an abundance of capital and willing hands to aid them. This county has a school fund of over $100,000, and last year appropriated more toward the repair and erection of school-houses, in proportion to her population, than any other county in the State. Only two counties appropriated more—St. Louis and Howard, the latter exceeding Holt only $31. There are 2598 children in the county, 33 school-houses, and $6116 appropriated for new school-houses.

OREGON, the county-seat, has an elevated and handsome situation,

south from the center of the county, and about twenty miles above St. Joseph. It was first settled in 1845, incorporated as a city November 5, 1857, and now contains a population of about 700.

Forest City, the commercial point of the county, is a thrifty new town, on the Missouri River, about two and a half miles west from the county-seat, and fifty miles above St. Joseph. The principal business done here is pork packing, and the manufacture of hemp. In the season of 1859, one firm packed and shipped $65,000 worth of pork. There are three large hemp warehouses, with hemp presses. Population about 600.

Lowell is situated on the Missouri River, thirty miles from Oregon. Population 300.

Mound City is situated on Davis Creek, twelve miles from Oregon, on the St. Joseph and Council Bluffs stage line. The name was changed from North Point to Mound City, by the Legislature, February 15, 1857—the post-office is still called "North Point." Population 150.

HOWARD COUNTY.

This county is situated on the left bank of the Missouri River, in the north central part of the State, bounded on the east by Boone, north by Randolph, and west by Chariton and Saline Counties—being separated from the latter by the Missouri River, which bears south, at this point, for a distance of some eighteen miles, forming a part of its western, and all of its southern boundary. The county has an area of 432 square miles, and was named in honor of General Benjamin Howard, (at that time Governor of Missouri,) of Kentucky. In 1860 it contained 16,077 inhabitants.

The first settlement made in this section of country was in 1807–8, by Colonel Benjamin Cooper, Daniel Boone, the Hancocks, and Barkleys.

Boon's Lick, near Boonesborough, was in early times a noted center, and "the Boon's Lick country" was considered as embracing all the county, and in some directions even more. Very few came to the State in that day who had not heard of "Boon's Lick," and it was deemed headquarters for all who wished to settle in the country, to meet there, compare notes, get bearings from the old pioneers, and look about for a location. The early settlement of this part of the State was attended with great hazard as well as severe hardships,

and was effected by individual exertion and intrepidity, on the part of small associations in conflict with the uncivilized and savage inhabitants of the forest. The early pioneers were obliged to erect stockade forts, for their own safety, to which they fled, in cases of extreme emergency. Those at Boon's Lick were Fort Hempstead, Cooper's Fort, and Kinkead's Fort. These three forts for a time contained all the white inhabitants of the upper country, on the north side of Missouri River, and, owing to the hostility of the Indians, they did not dare live outside the forts until 1816. The following list embraces the names of those who settled at Boon's Lick, March 10, 1810, with their places of nativity: Colonel Benjamin Cooper, Virginia; Francis Cooper, Kentucky; William Cooper, do.; *David Cooper, do.; John Hancock, Virginia; Abbot Hancock, John Busby, William Berry, John Ferrell, Henry Ferrell, Peter Popenow, Captain Sarshell Cooper, Virginia; Braxton Cooper, senior, Kentucky; *Joseph Cooper, do.; Stephen Cooper, do.; Gray Bynum, North Carolina; Robert Erwin, Kentucky; *Robert Brown, do.; James Cile, Virginia; Joseph Wolfscale, Kentucky; James Anderson, Middleton Anderson, William Anderson, Steven Jackson, Georgia; Reverend William Thorp, Baptist Minister, Kentucky; Josiah Thorpe, do.; Job Thorpe, do.; James Thorpe, do.; Amos Ashcraft, do.; Otho Ashcraft, do.; *Jesse Ashcraft, do.; Gilliard Rupe, do.; William Brown, do.; James Jones, do.; James Alexander, do.; Braxton Cooper, junior, do.; Robert Cooper, do.; John Peak, do.; and Benjamin Cooper, do.

The Territorial Legislature, at the session of 1815–16, passed an act creating the settlement at Boon's Lick into a county, by the name of Howard County, allowing them in the Assembly two representatives and one counselor. This county was from the west part of St. Louis and St. Charles Counties, and included all the settlements above the Osage River, on both sides of the Missouri, all of which settlements had been made after the year 1809. The first settlement was made south of the Missouri, above the Osage, in the year 1812. Previous to the year 1809, the forests appeared in all their primeval wildness, untouched by the pioneer's axe, and inhabited only by the savage hunters and their prey, the wild beasts. Although the pioneers above named were surrounded by hordes of savages, and were obliged to live in forts, and be constantly armed, whether in the field or the clearing, through their energy and perseverance they soon

* Those marked with a * are all that were living on the 24th day of August, 1859, of the above list of forty pioneers.

changed the wilderness into cultivated farms and civilized homes; and where they had found the deep, dark gloom of the forest unbroken, in less than eight years villages and towns had sprung up, with churches and schools, and many of the elements of an intelligent and refined society. During the year 1817, between 300 and 400 families immigrated to the county, principally from Tennessee, Kentucky, North Carolina, and Virginia. In 1818 **Cooper** was taken from Howard, and in 1820 three others—**Chariton, Boone,** and **Ray**—were formed from her limits. More votes were polled in Howard County in 1823 than in any other county in the State, not even excepting St. Louis.

Franklin had been for some years the county-seat, and was considered the "Metropolis of the Upper Missouri." It was during the year 1721 that the county-seat was moved to its present location—**Fayette**; and now scarce a vestige remains of old Franklin.

Physical Features.—The general surface of the county is undulating, and some portions are quite broken, principally covered with a good growth of timber, consisting of hickory, black and white walnut, oaks of various kinds, black and blue ash, maple, sugar-tree, sycamore, mulberry, elm, linn, cottonwood, coffee-bean, hackberry, and honey locust.

There are but four *natural prairies* in the county—Spanish Needle and Foster's on the upland, and Cooper's and the Weedy Prairie on the bottom-land; but through the industry and enterprise of the pioneers, thousands of acres of nature's dense forest have been transformed into cultivated farms, now graced by the commodious farm-house, and yielding abundant crops of all kinds of agricultural products. The western and southern boundaries of the county are washed by the Missouri River, while the interior is traversed by the Bonne Femme, Salt and Moniteau Creeks and their tributaries, running in a southerly direction.

The **Hurricane Hills** (so called from the course of a tornado that swept across their rugged brows and sheltered valleys) are truly beautiful and picturesque; and although years have gone by since the leveling blast passed over them, many of the branchless trunks of the mighty monitors of the forest still stand as monuments to mark the track of the raging tempest.

Minerals.—Lead has been found upon the surface in several localities, but no prospecting done. Stone coal is abundant throughout the county. Limestone grit and sandstones exist in immense quarries, beautifully stratified, and easily quarried for building purposes.

Of **Saline Springs** there are a number in this county, the largest

of which is Boon's Lick. Colonel Nathan Boone, and Daniel Boone, son of "Colonel Daniel Boone, Hunter, of Kentucky," came to Boon's Lick and made salt in 1806, and continued until 1810, when the works were taken by James Morrison and Wm. Becknell, who made thousands of bushels of salt annually from this spring, from 1810 to 1821, when Becknell sold his interest to Morrison, who continued the business till about 1832, when he sold out to Lindsey P. Marshall, who worked the springs three years and then suspended the works for four years, when they were rented to Mr. Ainsley, of Boonville, who worked them three years, at the expiration of which time L. P. Marshall sold them to John T. Marshall, the present owner. Nothing has been done at salt making here since Ainsley left the Lick in 1842—nineteen years ago.

A few of the choice spirits whose names are enrolled above still survive to relate the particulars of the thrilling events that transpired upon the spot now sacred to them and their children. Tomahawks and scalping-knives, with other instruments of Indian warfare, are still preserved in the families of those hardy pioneers who endured hardships only known to the early settlers of this country; and their bloody blades and battered edges indicate but too plainly the manner in which they were last used. Each surviving member has some history or bloody incident to relate associated with those sad mementoes of the excitement and dangers that surrounded the pioneers of Missouri.

Besides Boon's Lick, there are Burckhardt's salt works, Buffalo Lick, near old Fayette, and the Moniteau salt springs, each of which were profitably worked for some years, but are now abandoned.

Soil and Productions.—The soil of this county is exceedingly fertile, and produces an abundant yield of all kinds of grain, grasses, fruit, and vegetables that grow in this latitude, farmers having gathered as high as 1500 pounds of hemp, 2000 pounds of tobacco, 100 bushels of corn, 400 bushels of wheat, 50 of oats, etc., to the acre.

Tobacco Culture.—As *tobacco* is one of the staple products of this county, as well as of the State, we deem it not out of place to insert the following article relative to its culture and manufacture, contributed to this work by B. W. Lewis, Esq., of the firm of B. W. Lewis and Bros., the most extensive manufacturers west of the Alleghany Mountains.

GLASGOW, MO., August 29, 1860.

MESSRS. HUYETT & PARKER:—

GENTLEMEN—In reply to your letter of this date, making inquiries relative to the growth and culture of tobacco, together with the proper

period for sowing the seed, setting the plants, and the preparation of the land in Missouri, I beg to say, that the seed should be sown broadcast, in beds situated in a warm location, which should be well burnt to destroy any indigenous seeds that may be in the ground; then the earth well pulverized and nicely prepared to receive the seed, which should be sown in February or March, and as early as the weather will permit the proper preparation of the beds. The usual and best time for setting the plants in this latitude is between the twentieth of May and the twentieth of June. The land intended for setting should be fresh, (new land lately cleared is preferable,) thoroughly and deeply plowed, evenly laid off in hills, or drilled three feet each way. When thus prepared, the plants may be drawn from the beds immediately after a reasonable rain, and set in the hills in the same manner as cabbage plants. The ground, after being planted and until the maturity of the plant, should be well cultivated and kept perfectly clear of weeds and grass. As the plant approaches maturity, it should be topped, leaving from eight to twelve leaves to each plant—the grower being governed in this operation by the size and strength of the plant and the richness of the soil as to the proper time that this should be performed. After topping, with favorable weather the plant rapidly approaches maturity, and ripens usually in September; but in all cases the plant should stand in the field until it fully ripens, when it should be cut and housed. In this process great care should be taken, as the best crops are frequently ruined by neglect and improper handling at this time, such as getting sunburnt, bruised and broken. As soon as it can be carried to the tobacco barn, which building should be without floors, and throughout the interior of the house poles some four or five inches in diameter should be placed across in tiers, about four feet apart, horizontally, and the tiers so placed as to leave a space between them of four or five feet; the plants are now hung on small sticks, four feet long and one inch in diameter, from six to eight on each stick. The sticks so hung are then placed with either end resting on the poles. In this manner the house is now filled, and, should the weather be wet, fires should be kept under the tobacco until cured, but if dry, and the house well ventilated, it will cure without fire. When properly cured, which will require until about the first of November, the tobacco will, after a warm rain, absorb sufficient moisture to permit its being handled; it may then be taken down; placed in the house; the leaves stripped from the stalk; assorted and tied up in hands of from fifteen to twenty leaves; tied at the stem with a leaf of indifferent quality. When this is completed and the "order" is not too high, that is, the tobacco

does not contain too much water so as to cause mould and damage, it may be nicely put in bulks ready for delivery when sold; but should the order be too high, it should again be hung up until the proper order is obtained. It is now ready to pass into the hands of dealers and manufactures, and if these are not judges of the article and familiar with its growth, and aware of the causes that injure it, may suffer heavy pecuniary loss, as many know by sad experience, for the article of tobacco is subject to injury and damage from multitudinous causes, from the period of planting until it is manufactured and ready for market.

Your obedient servant,

BEN. W. LEWIS.

P.S.—The average yield of tobacco in the vicinity of Howard County is 1000 pounds per acre—but as high as 2000 pounds have been raised on an acre in several instances.

B. W. L.

To give the reader a more correct idea of this celebrated manufactory, we present to them a view of the works, drawn and engraved expressly for this work; deeming its magnitude and extensive business as entitling it to the place it occupies in these pages.

B. W. Lewis & Brothers, tobacco manufacturers, Glasgow, Missouri. Firm composed of Benjamin W. Lewis, James W. Lewis, and Thomas J. Bartholow, in connection with the firm of Lewis, Perry & Co., St. Louis, Missouri, which latter firm is composed of William J. Lewis, John D. Perry, and Benjamin W. Lewis. The Glasgow house handles annually about 1,500,000 pounds of leaf tobacco, which in the main is purchased direct from the planters and delivered by them loose, in wagons, at the factory, during the months of January, February, March, and April, principally; the price paid to the planters varies, of course, with the relative value of the article in the Eastern and Southern cities, and also in the markets of Europe. The quality also of different planters' productions varies, and is purchased according to quality, and its adaptation, whether for export to foreign markets or suited for chewing tobacco for home consumption, the latter article generally being the most valuable; but the great difference in quality frequently makes a wide range of prices. As an instance, this firm, the present year, has purchased tobacco at prices ranging from three to thirty dollars per 100 pounds; the latter, however, is selected leaves, adapted to wrapping fine chewing tobacco, and was purchased at the warehouses in St. Louis, prized in hogsheads, where they also purchased at the

premium sales, held in June last, the two premium hogsheads at the extraordinary prices of $102 60, and $125 per 100 pounds—the highest prices ever paid for an equal quantity of tobacco in the United States. This firm manufactures, at the Glasgow factory, into chewing tobacco, annually, about 1,000,000 pounds; the remainder is worked into strips and dry leaf, and exported direct from the factory to Great Britain and the continent of Europe. The chewing tobacco is sold principally to dealers and jobbers, in Missouri, Iowa, Nebraska, Kansas, and Arkansas. They employ in the working of this amount of tobacco an average of about 125 hands, principally negroes, and a capital of about $250,000.

The business was commenced in a small way, by the senior partner, Mr. B. W. Lewis, about twenty-two years ago, with a capital of less than $1000, and has been gradually increased until it is now the largest manufacturing establishment of the kind west of the Alleghany Mountains.

The St. Louis house of Lewis, Perry & Co. are exclusively engaged in the manufacture of chewing and fine-cut smoking tobacco; they work from 700,000 to 800,000 pounds of leaf tobacco, and employ from 80 to 100 hands, and a capital of $150,000.

Population and Business Statistics.—For an interesting account of the early settlement of this county from the lips of the participants, see "Incidents in the Early Settlement of Howard County," in Book II. of this work. The population of Howard County in 1860 was 10,120 whites, 71 free colored, and 5886 slaves. The taxable property amounts to $16,950,620.

Of business houses in the county, there are banks, 3; newspapers, 2; lawyers, 11; physicians, 22; merchants, 20; grocers, 6; druggists, 6; silversmiths, 3; tinners, 3; blacksmiths, 15; wagon-makers, 12; saddlers, 3; tailors, 10; shoemakers, 9; cabinet-makers, 2; carpenters, 25; tobacco manufacturers, 8; saw-mills, 15, (steam, water, and horse power;) flouring-mills, 6, (5 steam and 1 water power;) hotels, 7; coopers, 5.

FAYETTE, the county-seat, is situated upon an elevated site, sufficiently undulating to give it a fine appearance. The buildings are principally of wood, and painted white, which contrast handsomely with the green foliage of shade trees that grace and beautify the town. The Court-house and educational edifices are fine buildings, both in architectural beauty and capacity, and reflect much credit upon the taste, judgment, and liberality of the citizens who erected them. The society of Fayette is refined and intelligent, and has many of the peculiarities and much of the hospitality of Virginians and Ken-

tuckians, many of the present inhabitants having emigrated from those States.

Fayette was incorporated December 7, 1855, and contains about 800 inhabitants. Distance from Fayette to Glasgow, on Missouri River, 12 miles; to Renick, on North Missouri Railroad, 22 miles; to Jefferson City, 60 miles; to St. Louis, 160 miles.

The population of **Glasgow** is about 1200; **Franklin**, 200; **Boonsborough**, 50; **Bunker's Hill**, 50; **Landmark**, 20; **Roanoak**, 350.

Glasgow, the commercial city of the county, was incorporated February 27, 1845; is situated on the Missouri River, 70 miles from Jefferson City; 180 by land, and 264 by water, from St. Louis. Of business houses in Glasgow, there are of bankers, 2; newspaper, 1; lawyers, 2; physicians, 5; merchants, 4; grocers, 4; druggists, 3; silversmiths, 2; tinners, 2; blacksmiths, 3; wagon-makers, 2; saddlers, 2; tailors, 2; shoemakers, 3; cabinetmakers, 2; carpenters, 3; tobacco manufactories, 5; steam saw-mill, 1; steam flouring-mills, 2; churches, 3—Old School Presbyterian, Methodist, and Christian.

HOWELL COUNTY.

This county is situated in the southern part of the State, bounded on the south by the Arkansas State line, on the east by Oregon County, (from which it was formed, in 1857,) on the west by Douglas and Ozark, and on the north by Texas County. Area about 650 square miles, and is the smallest tax-paying county in the State, except Shannon. Population in 1860, 3251.

For a general description of this county, the reader is referred to Oregon and Texas Counties.

Spring River, which rises in this county, was named by Captain John Shaw, now of Wisconsin, who explored the country in the spring of 1809, and tracing this stream to its source, found there a very large spring, and accordingly named it Spring River.

The lands in this county are broken and hilly, some portions being high table-land, and well adapted to fruit and grape culture. The valleys are generally very fertile.

King's Mount is a high central point, or water-shed, from which streams run in every direction. The scenery in some portions of the county is truly grand and picturesque. The streams are clear and rapid, and the narrow, deep, rocky ravines and chasms, shaded by

heavy forests of pine, render it a place of some attraction to the admirers of wild and romantic scenery.

WEST PLAINS is the county-seat, and only town of any importance in the county.

IRON COUNTY.

This county is situated in the southeast portion of the State, bounded on the east by St. François and Madison, on the west by Reynolds, Dent, and Crawford, on the north by Washington and St. François, and on the south by Reynolds and Wayne Counties. Population of the county in 1860, 5723. Total value of taxable property, as assessed, $10,756. The increase during the year 1859 was $206,025, on the following items: Increase in value of mills and furnaces, $24,705; lands, $17,829; town lots, $134,308; notes and bonds, $18,463; money on hand, $1428; personal property, $9292; decrease in slaves, 14; total value of the 226 slaves in county, $98,350.

Physical Features.—The principal portion of this county is broken and mountainous, and much of the land unfit for cultivation, but generally heavily timbered with oaks, hickories, elm, ash, black walnut, hackberry, locust, red cedar, and yellow pine. The Arcadia Valley is a beautiful and fertile tract of land, well watered, having a good supply of timber, and soil adapted to all farming purposes. Some of the best farmers and fruit growers in Southeast Missouri have farms that now produce well, although they have been bearing crops for more twenty years past. Those wonderful formations, Pilot Knob, Shepherd Mountain, Arcadia Mountain, and Bogy Mountain, each of which contains immense deposits of iron ore, are in this county. (See Geological chapter, also Natural Curiosities.)

Minerals—Pilot Knob—The Furnaces, etc.—This is emphatically *the* IRON County of the Union, possessing probably a greater quantity of iron ores, of purer qualities, than the same area of territory anywhere else on the face of the globe. Hence the appropriateness of the name given the county by its projector, Hon. James Lindsay. Pilot Knob is a cone-shaped hill, rising in a valley to a height of 581 feet above the bloomery at its base. Owing to its height, isolation, and prominent position, it is seen in some directions for a great distance, and having served as a landmark to hunters and travelers,

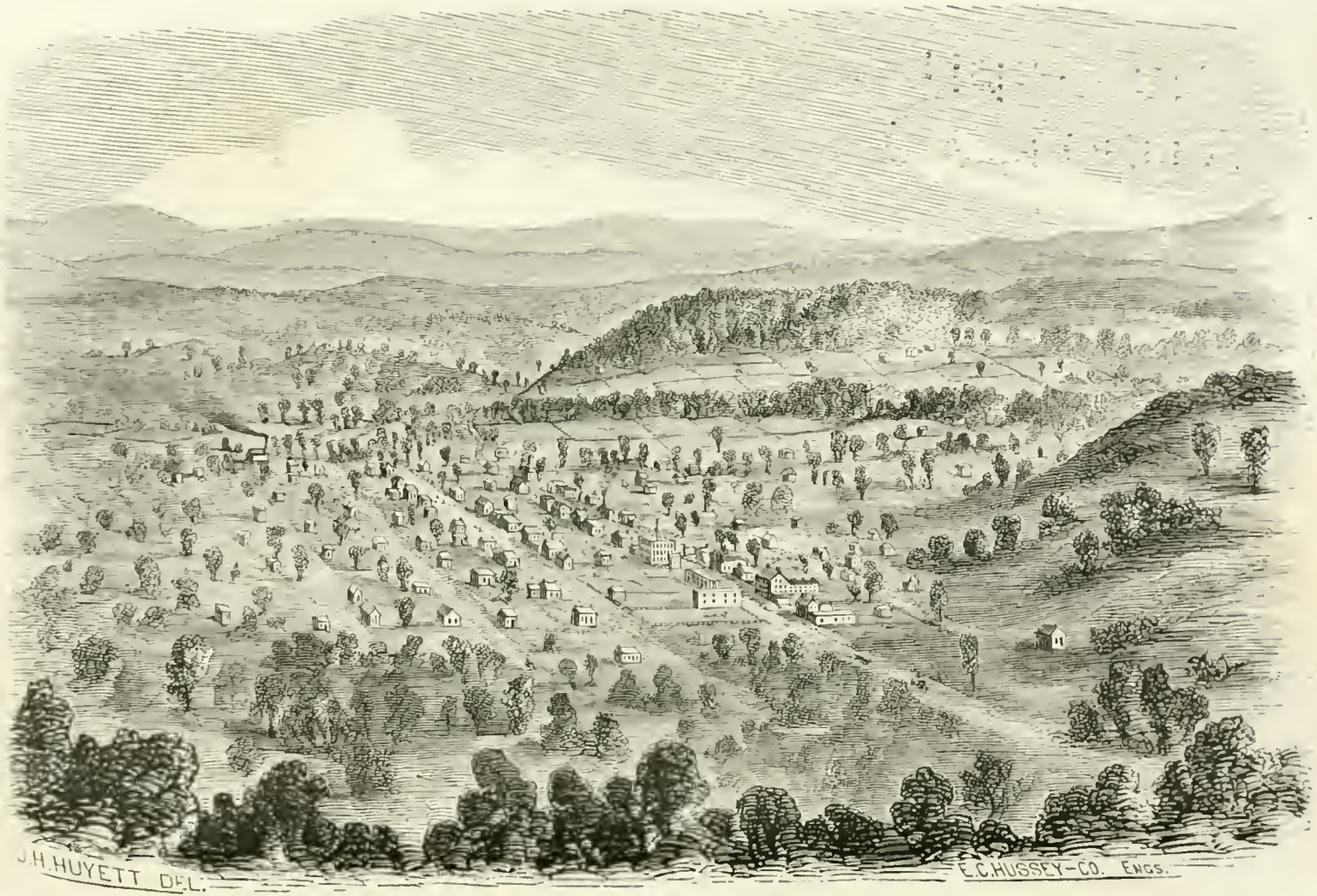
was long since named "Pilot Knob." This mountain (which, as before stated, is 581 feet high, or 1118 feet higher than the level of the Mississippi, at St. Louis) covers an area of 360 acres, and is principally of iron ore, which yields in working, about 65 per centum. Mr. Ulffers, who made a survey of this mountain for the Geological Corps, estimates the upper 141 feet of the knob to contain 31,299,012,554 pounds, or 13,972,772 tons of iron ore, independent of the soil and rock intermixed. Then there is 440 feet of ore below, widening as it descends, upon which he made no estimate. The reader can satisfy himself that the *quantity* is sufficient to last for ages, and the quality for many purposes is inferior to none.

Shepherd Mountain is situated 6987 feet (about $1\frac{1}{3}$ miles) west of south from Pilot Knob. This formation is 79 feet higher than Pilot Knob—being 660 feet above the valley. It is of an oblong shape, lying northeast and southwest, nearly 2 miles in length, by 1 in width, and covers an area of 800 acres. The ores found in this mountain are magnetic and specular oxide, and a mixture of the two. Some specimens have such a polarity that they are taken by visitors to various parts of the world, and are frequently called "loadstone." Some specimens have been found which would attract the needle of a pocket compass at a distance of two feet. The ore from Shepherd Mountain has been worked, and found to be very pure, and by being mixed with that of Pilot Knob, makes superior iron. Besides these, are the Buford ore bank, the Big Bogy Mountain, the Russell ore bank, and the Arcadia Mountain, each of which contains large deposits of iron ore; but there being such an abundance in the two first named, so much nearer established works, that nothing is done toward developing the others. Lead ore has been found in several localities, and it is thought immense deposits will be developed at an early day in the western and southern portions of the county. Gold-bearing sand, it is said by many, has been found in some of the streams of the county, and as the same rock formations exist in the hills here as at Pike's Peak, it is more than probable, if that be true, that rich leads of gold-bearing rock or quartz will be discovered by prospecting, for which parties of miners from California and the Rocky Mountain Mines are about forming. We have but little faith, however, in their success. Marble, of a variety of kinds and colors, exists in immense and inexhaustible quantities in this county—one bank being from fourteen to fifteen miles in length, with an average width of one mile. This marble is already attracting the attention of capitalists, and the day is not far distant when it will be used through-

out the West, to the exclusion of imported marbles for building and ornamental purposes.

Kaolin, from which "ironstone china" is manufactured, is abundant in this county, and although much of it has been wasted, by the manufacture of stoneware, jars, jugs, etc., there is an immense bed of it left, and the proper material for glazing is also near at hand. Should some capitalist establish here a manufactory of porcelain ware, it would save to the State and the Western country thousands of dollars annually sent to foreign countries for ware no better than can be manufactured here in Iron County.

History.—The first settlement upon the territory now embraced within this county was made by Ephraim Stout and Robin Sinclair, early in the present century. In 1812, fearing the Indians, who were then so numerous as to "have their own way about everything," Sinclair removed down to the Creek Nation, now Madison County, but Stout remained, and for a number of years the neighborhood where Ironton, Arcadia, and the "Russell Settlements" now are, was called Stout's Settlement; and the small stream crossing the valley between Ironton and Arcadia still perpetuate Stout's name, and ever will. In 1816, iron ore was first found in what is called "Shut-in Mountain," two miles east from Ironton, and taken to St. Genevieve to be tested. A flouring-mill and smelting furnace were soon erected to be propelled by the excellent water power afforded by Stout's Creek, at the Falls. These works were erected by Mr. James Tong, in 1816, and were probably the first in the State. The mechanical work was done by Corbin Ashabrand, and the castings brought from Pittsburg. In 1818, James Brown settled on the place now owned and occupied by Hon. James Lindsay, and during the same year, Anthony Shoep settled where Cyrus Russell now resides. In 1838 or 1839, a man by the name of Powell offered William Huff, now of Ironton, eighty acres of land where the present thriving and important town of Ironton now stands, for a horse, and the offer was declined. Now the aggregate valuation of town lots upon "that 80" is probably not less than $50,000. Although not directly connected with the early history of this county, we will mention that Captain John Hall, an old revolutionary soldier, resides here, who is 100 years of age. He was born in North Carolina, in 1760. His wife is still living—they having lived together upwards of seventy years. This old veteran moved to Missouri several years ago, and until he was severely injured by the falling of a tree four years ago, he made it a rule to cut two cords of wood a day, regularly. This he did until he was upwards of ninety-six years of age.



IRONTON, FROM THE SUMMIT OF PILOT KNOB.

Iron County was organized by an act approved February 17, 1857. The honor of getting the bill in shape, and securing the formation of the county, is due to Hon. James Lindsay, for a number of years a member of the Legislature, and the editor of the "Ironton Furnace."

Industrial Pursuits.—There are in Iron County 3 newspapers—the Ironton Register and Arcadia Prospect, weekly, and Ironton Baptist Journal, semi-monthly—15 merchants, 12 grocers, 4 bakers, 2 confectioneries, 13 liquor saloons, 3 drug stores, 4 physicians, 1 dentist, 6 lawyers, 3 land agencies, 3 tin and stove stores, 4 boot and shoe shops, 2 saddlers, 4 tailors, 1 silversmith, 14 carpenter shops, 2 cabinet shops, 3 painters, 9 plasterers, 6 stone and brick masons, 2 livery stables, 3 blacksmith and wagon shops, 4 butcher shops, 1 High School, 1 brewery, 6 hotels, 1 Masonic Lodge, 1 Odd Fellows' Lodge, 1 Good Templars' Lodge, 7 district schools, and 6 church organizations.

IRONTON, the county-seat, is situated on the southwest half of the southwest quarter of section 32, township 34 north, range 4 east; is 1 mile south from Pilot Knob, 7 miles south from Iron Mountain, 87 by the Iron Mountain Railroad from St. Louis, and 20 miles from Fredericktown, by the turnpike road. It was incorporated as a city February 1, 1859, and has now a population of about 500. This place is delightfully situated on the eastern slope of the Shepherd Mountain, and extends into the valley at its base. The town plat is everywhere shaded by a natural growth of large, thrifty forest trees, and watered by springs of pure cold water, some of which are chalybeate, and others sulphur. Situated in the midst of high hills, and being 550 feet higher than St. Louis, this locality is justly entitled to the wide-spread reputation it bears, of being one of the most healthy locations in the State.

Soon after the formation of the new county, H. N. Tong, Esq., offered to donate to the county every alternate lot on the town plat, if the seat of justice was permanently located in Ironton. By a vote of the citizens of the county, held in August, 1857, Ironton was selected as the county-seat. The lots were transferred, and sold; and the fine, substantial brick Court-house, recently erected at a cost of some $14,000, was built from the sale of these lots. Messrs. Tong & Carson, the present proprietors, have ever manifested great liberality toward those who wished to locate here, and the rapidity with which the town has grown to its present size, and the sober and industrious class of citizens forming the community, prove not only the correctness of their judgment in selecting this as a town site and business

center, but that their efforts have been rewarded. The buildings are generally of wood. The Ironton House, N. Aubuchon, proprietor, built by H. N. Tong, in 1858–9, is a commodious hotel, can accommodate 150 persons, and is generally full, especially in the summer season, when families and individuals from St. Louis and the Southern cities come to Ironton as a summer resort, to escape the heat, dust, and unhealthy atmosphere of cities in warm weather. Attracted by its romantic beauty, (embosomed among the mountains,) and the healthfulness of the locality, as well as its accessibility to St. Louis, many persons have purchased residence sites here, and will soon build upon them. The topography of the country shows this to be the proper location for one of the largest cities between St. Louis and Memphis, and being the commercial center of the richest mineral region in the world, one need not look far into the future to see the hillsides and valleys graced by handsome residences built of the Ozark marbles, and the gold,(?) platina,(?) nickel, lead, and iron, brought here from a thousand mines in the vicinity, to be sent to Memphis or St. Louis by railroad. Then the "gravel ridges" will be productive vineyards, and the "Arcadia valley wine" will become a favorite brand, and the "Ironton ironstone ware" will be sought and used throughout the entire Mississippi valley. Iron County has all the natural elements to cause this result—all that is needed beside is energy and capital, neither of which will be long wanting, when the natural resources and advantages are seen and appreciated.

Arcadia, situated one mile south from the county-seat, is pleasantly located at the base of a beautiful range of hills to the south of the "Arcadia valley." The town was laid out in 1849, by Josias and Jerome C. Berryman. In 1846 they established the Arcadia High School, which may be considered the nucleus around which the town has grown up. The "Harris House," built and kept by Z. J. Harris, Esq., is thronged with visitors in the summer season. Upon this town plat are two very large springs of pure cold water, each of which has been estimated to discharge twenty-five barrels of water an hour.

Pilot Knob.—The first step taken toward developing the iron deposit at this place was in June, 1847, when the "Madison Iron and Mining Company" was incorporated, with a capital of $500,000. The company erected a furnace that same year, which was put in operation in 1848, and in 1849 they erected a steam forge. In 1854 a second furnace was erected. In November, 1855, the name of the company was changed, by an act of the Legislature, to that of the "Pilot Knob Company," and the capital stock increased to $1,000,000. J. B. Bailey, Esq., has the management of the affairs of the company

at the works. This place was settled entirely by persons connected with the iron works, until the completion of the Iron Mountain Railroad, since which time the population has increased to about 800, including persons of various callings.

Middlebrook is on the Iron Mountain Railroad, three miles north of Pilot Knob. It was laid out by Benjamin F. Johnson, in 1857, and has now a population of about 250.

JACKSON COUNTY.

This county is situated in the west-northwest portion of the State, bounded on the north by the Missouri River, which separates it from Clay and Ray, on the east by Lafayette and Johnson, on the south by Cass, and on the west by the Kansas line.

Physical Features.—This county has an undulating surface, with a desirable division of prairie and timber, underlaid with limestone well adapted to building purposes, and is well watered by the Big Blue, Little Blue, and Big Sniabar, with their numerous tributaries.

History.—Jackson County was organized in 1827; the territory taken from Lafayette (then Lillard County.) **Independence** has always been the county-seat, 160 acres having been donated by Congress for the site at the organization. After Major Sibley, the first settlers were Abram McClelland, Joel, John, and Joseph Walker, who settled near Sibley; several families named Hitchcock, and Russell, also Isaac Drake, David Daily, Aaron Overton, and several families named Patton, who settled below Blue. L. W. Boggs (afterward governor) and S. C. Owens were first clerks of the circuit and county courts, and Jos. Walker the first sheriff. Henry Burriss, Abram McClelland, and Richard Tristoe were first judges, and Hon. David Todd the first circuit judge. In 1808, Major G. C. Sibley established a military post and government trading-house where the present town of Sibley stands; and it was occupied as such, under Major Sibley, until 1822, when it was abandoned by government, and the town laid out upon the old site was named in honor of the pioneer patriot who for so many years served the government at the most western post on the Missouri River. There are many thrilling incidents connected with Major Sibley's sojourn

at Fort Osage, some of which are given in Book II. of this volume. See "Incidents in the History of Fort Osage." At the session of 1824–25, the Counties of Jackson and Clay were organized, and boundaries defined. The first settlers were principally from Kentucky; hence the name often applied to this section "New Kentucky." In 1830 this county had a population of 2823; in 1840, 7612; in 1850, 14,001; in 1856, 17,071; and in 1860, 23,191.

The Soil, Productions, etc.—The soil of this county is exceedingly fertile, producing the heaviest yields of all kinds of agricultural products. Although the most western county in the State, south of the Missouri River, and being the shipping point of the five fertile Counties of Cass, Bates, Vernon, Johnson, and Henry, this was in 1859 the third largest tax-paying county in the State, her tax amounting to $19,032; and only St. Louis and Lafayette paying more tax. By reference to the statistical tables of counties, it will be seen that the agricultural, manufacturing, and commercial resources of Jackson County are second to but one or two in the State, and in some respects it has no equal. The following will indicate its growth, business, wealth, and population:—

Years.	Acres in farms.	Value.	Value of live stock sold.	Manufactories.	Capital invested.	Annual product	Merchandise sold.
1850.....	129,688	$1,723,995	$450,364	78	$107,903	$270,553	*3,183,502 34
1859.....	295,913	3,824,082	*2,198,200	*93	.....	.....	.....

This county is increasing in wealth and population, probably as rapidly as any county in the State. The amount of taxable property in the county for the year 1859 is as follows:—

Polls.....		2752
Land—acres, 342,023.....	valuation	$3,870,759
Town lots.....	"	1,997,090
Negroes, 3042.....	"	1,481,760
Insurance companies.....	"	17,000
Other personal property.....	"	881,755
Cash notes, etc.....	"	1,181,271
Steamboat stock.....	"	20,000
Bank stock.....	"	90,000
Total.....		$9,539,675

* These estimates apply to Kansas City alone for the year 1857. Some other important statistics will be found under the head of "Kansas City."

State tax	$19,930 35
County tax	24,887 18
Railroad tax	24,887 18
State Asylum	1,589 94
State interest fund tax	9,430 28
Whole amount of taxes paid	$80,724 89

It will be observed that there is no State tax assessed upon the $90,000 bank stock, as the banks pay a bonus to the State.

INDEPENDENCE, the county-seat, has a population of about 4030, and is very happily situated upon high rolling land, with a gentle declivity in all directions, connected with the densely populated and well-tilled agricultural district surrounding it, by Macadamized streets and roads. The city is bounded on the east, south, and west by natural groves of forest trees, which add much to the beauty and healthfulness of the location. The project of establishing a town here, *as a town*, we believe is due the first New Mexico traders; and the exportation of goods to the Mexican war, first by government, and afterward by Brown, Waldo & Co., added much to the wealth and business of the place. (The last-named firm lost 3000 head of stock and a large number of wagons by one of those severe storms which occasionally sweep over the plains.) However, among the earliest permanent settlers may be named Col. John Bustleson, L. W. Boggs, former governor of the State, J. R. Swearingen, Major Robt. Rickman, James and Daniel King, Russell Hicks, J. Aull, S. C. Owens, S. D. Lucas and others. The town was laid out in 1824, but was a trading point for the mountain river and the traders of the plains, Utah, and New Mexico for long years before. In 1827 some Mormons came from Kirtland, Ohio, under "Prophet Joe Smith," and settled around the then village, and eventually selected a site for their Temple, near Independence. About the year 1831 the citizens drove them away on account of the obnoxious character of their creed. They then retired to Grand River, where they were again expelled, and still later to Nauvoo, Illinois, where the ruins of their Temple mark their last resting-place in the States, they having immigrated to Salt Lake City, where they still remain. (See chapter devoted to this subject in Book II.)

Independence was incorporated March 7, 1849, and under a new act of incorporation, February 23, 1853, which extends the limits of the town to the Missouri River—a distance of two and a half miles from the public square. The Court-house is a substantial brick building, with porches, supported by Roman-Doric columns on its north and south sides. The public square embraces about three

acres, and is inclosed by a handsome iron fence. Three hotels and a number of extensive mercantile houses, several large and substantial churches, some possessing much architectural beauty, are situated in various parts of the city. The Independence Female College, established in 1854, has an average of about 100 pupils; Rev. W. H. Lewis, President and Principal. The Male and Female High School is also liberally supported. Several of the finest private residences are surrounded by tall forest trees and handsomely-arranged grounds. The different industrial pursuits are well represented; and extensive manufactories, warehouses, stores, and trading-houses do a business with the interior, amounting in the aggregate to several millions of dollars. The first railroad in the State was one built and put in operation (at a cost of some $30,000) between Independence and the river before Kansas City was projected. An excellent turnpike road has taken its place. Two weekly newspapers are published here*—(see names of papers and publishers in another chapter.)

Kansas City is situated on the south side of the Missouri, a short distance below the mouth of Kansas River, from which it derives its name. In early days this stream was called the Kaw River, and the "Kaw's Mouth" was a noted place among the Indian traders and mountain trappers who came here to exchange their furs and peltries for provisions, stores, etc. Kansas City was first regularly laid out by the survey of J. C. McCoy, Esq., in 1846, from which date its first permanent growth may be dated. The original plat embraced 256 acres, but since that time "additions" have been made to the city by Messrs. McGee, Swope, Ross and Scarritt, Holmes, King, Lykins, Coates, Boulton, Ranson, Lawrence, Guinotte, and McDaniel, which have increased the area of the city probably tenfold. McGee's addition embraces nearly 1300 lots, some of which are among the most beautiful and eligible residence sites in the city. About half the entire number have been sold and improved by the erection of handsome residences, extensive business blocks, and neat cottages. Col. E. M. McGee is one of the most wealthy and enterprising men in this section of the State, and has done much to advance the wealth and permanent prosperity of the city and the county. The population of McGee's addition, January 1, 1857, was twenty-one. On the 1st of June, 1858, it was 1392, and is steadily increasing. Cost of buildings erected to June 1, 1858, $247,400.

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* We are under special obligations to H. M. McCarty, of the Westport "Border Star," and R. T. Van Horn, of the Kansas City "Journal of Commerce," for valuable information.

KANSAS CITY, MO.

In 1859 over 250 buildings were erected in Kansas City. As will be seen by the illustration, Kansas City is situated upon broken ground, and but a portion of either the business or residence part of the city can be seen from any one point. It was incorporated February 22, 1853; however, several important amendatory acts have since been passed. The "Chamber of Commerce" was incorporated November 9, 1857. The population of Kansas City, in 1857, was 5185; in December, 1859, it was over 8000.

The following table, prepared by G. M. B. Maughs, M.D., shows the *climate* of Kansas City, as compared with that of St. Louis and Cincinnati :—

Cities.	North Lat.	Mean Annual Temp.	Greatest Heat.	Greatest Cold.	Greatest Range.	Mean Heat of Spring.	Mean Heat of Summer.	Mean Heat of Autumn.	Mean Heat of Winter.	Minimum Annual Amount of Rain.	Min. Altitude ab. Tide Water.
Kansas City.	39° 6′	53·30°	104°	—28	123°	55·36°	75·20°	54·10°	28·00°	33 in.	810 ft.
St. Louis.	38 37	55·57	109	—25	133	55·55	76·10	54·34	34·00	42 in.	450 ft.
Cincinnati.	39 6	53·36	100	—17	117	73·50	73·19	53·15	33·21	47 in.	514 ft.

Trade of Kansas City—1857.

Total value of merchandise sold in Kansas City	$3,183,502 34
Number of packages received at warehouses in Kansas City	381,628 00
Number of wagons " " " " " "	1,172 00
Pounds of Mexican wool received at warehouses in Kansas City	865,000 00
Number of buffalo robes " " " " " "	70,400 00
Bales of furs and skins " " " " " "	2,580 00
Amount of gold and silver in boxes rec'd " " " "	1,139,661 00
Pounds of silver ore from Gadsden purchase " " "	2,000 00
No. of wagons loaded with goods rec'd " " " "	9,884 00
Freight charges and commission paid on goods rec'd at do	545,020 00
Horses, mules, and oxen sold (average $86 per head)	14,700 00
Stock cattle sold (averaging $18 per head)	52,000 00
Total of trade of Kansas City	$6,011,300 34

We have not the statistics of any year since 1857, but the business of the city is increasing very rapidly. In 1859 there were $346,770 worth of buildings erected.

These statistics show Kansas City to be the heaviest commercial point west of St. Louis, and prove the correctness of the statements, as to its advantageous location, made by the explorers, Fremont and Beale, and by Dr. Gregg, in his "Commerce of the Prairies," and the realization of the prediction of its future, made by Hon. Thomas

H. Benton twenty-five years ago. If such be the trade and commerce of Kansas City *now*, with not a mile of railroad leading in any direction, what will be her commercial importance when her great iron arms of commerce are extended to the East, Northeast, North, West, Southwest and South!

Westport has a pleasant and healthy location, four miles from Kansas City, and before the last-named city was projected was an important outfitting point for traders and trains starting to Santa Fe, New Mexico, and the Rocky Mountains. Much of this trade has since been diverted to Kansas City. Around Westport is an excellent agricultural country, well settled by experienced farmers; and the neat and substantial character of the business blocks, churches, and residences, the tone of society, and the spicy newspaper—("The Border Star")—so ably conducted and liberally supported, all indicate that Westport is a desirable situation, and the citizens intelligent and industrious. This place was incorporated February 12, 1857, and has a population of 2800; **Sibley**, 800; **Lone Jack**, 500; **New Santa Fe**, 500; **Pink Hill**, 100; **Ray**, 100.

Industrial Pursuits.—There are in this county, of newspapers, 7; banks, 6; lawyers, 44; doctors, 36; merchants, 60; grocers, 25; druggists, 15; silversmiths, 15; tinners, 10; blacksmiths, 12; wagon-makers, 40; saddlers, 20; tailors, 20; shoemakers, 25; cabinet-makers, 10; carpenters, 40; tobacco manufacturers, 3; saw-mills, 25, (steam power;) coopers, 10; flouring-mills, (steam,) 20; hotels, 10.

The number of churches, 20, numbering as follows: Episcopal, 200 members; O. S. Presbyterians, 500; Methodists, 1200; Baptists, 500; Catholics, 500.

The schools number about 50, and the pupils are estimated at 2000.

For particulars respecting railroads being constructed to connect with various towns in this county, see chapter on "Railroads."

JASPER COUNTY.

This county is situated in the southwest corner of the State, bounded on the west by the eastern line of Kansas, and separated from the Arkansas line by Newton and McDonald Counties.

Population in 1850, 4223; and in 1860, 6974.

Physical Features.—The surface of the county is gently undulating, with about two-thirds prairie, and the remainder timber land. The prairies are very fertile, interspersed with streams of pure running water, the courses of which are skirted with oak, walnut, ash, hickory, sycamore, etc. The southern part of the county is underlaid with mountain limestone, containing numerous and extensive deposits of lead and zinc.

As an agricultural region, this stands high. The largest yield named is of corn, 100 bushels to the acre; wheat, 40; oats, 45; potatoes, 125; timothy, 1½ tons; Hungarian grass, 6 tons; pears, apples, peaches, etc., abundant. Onions, beets, carrots, etc., not raised to any extent. Prairie grass, blue-grass, and timothy yield heavy crops; this fact, with the abundance of clear, cold, spring branches, and the mild climate, renders this county well adapted to stock raising. Improved lands are worth from $5 to $25 per acre; unimproved, from $2 to $5. The present market for this county is Southern Kansas and the Indian country. Several thousand dollars' worth of furs and buffalo robes are annually bought at Carthage, and shipped to the East and North.

History and Business Statistics.—The first settlement made in the county was probably at Sarcoxie, in 1834, by Thacker Vivian, Esq., who laid out a town, and from its central location on Center Creek, called it Centerville. In 1839, at the suggestion of the Hon. Jas. S. Rains, the name was changed to "Sarcoxie," in honor of an old and friendly Indian Chief of the Six Nations. For some time before the town was laid out, the present site was occupied by a farm and a store; the latter owned and kept by John Jewett, whose trade was principally with the Senecas, Shawnees, and other neighboring tribes of Indians. This is noted as being one of the oldest towns in the Southwest, and of having a moral community, excellent schools, and a delightful situation in the very heart of the Spring River valley. The town contains 6 merchants, 2 druggists, 2 wagon shops, 3 blacksmiths, 1 cabinet, 1 tin, and 1 saddler shop. And

although Sarcoxie is making no effort toward improvements, yet, like an old pioneer, with his gray hairs loaded with honor, is looked up to with a sort of reverential feeling and respect.

Churches and Schools.—Methodist E. Church South, and Methodist Protestant, Cumberland Presbyterians, and Baptists have each organizations. M. E. Church South are most numerous and influential. This denomination has a good edifice at Cave Spring, and there are other commodious meeting houses in other parts of the county, open to all religious societies. There are high schools at Carthage and Sarcoxie. At Carthage is a good brick school-house, thirty by sixty, two stories high, with two acres laid off into pleasure-grounds. This county has a permanent school fund of nearly $150,000, at ten per cent. interest, and about $15,000 annual income for distribution. Both teachers and school-houses, however, are very inferior, we should infer from the State Superintendent's Report of Public Schools.

Inducements to Immigration.—Farmers will here find a healthy climate, fertile farming lands at a low price, on long credit, and a remunerative price for all they produce. Stock growers will find large yields of native and cultivated grasses, pure running water; very important considerations with them. Manufacturers and capitalists will find in Spring River alone at least fifty sites furnishing good water power, unimproved. This stream, for rapidity of current, regularity of water, and adaptation to machinery, has no superior in this part of the State. Its banks, though low, are seldom overflowed, and the beds of the streams are gravel or solid stone, and the current varies but little during the entire year. Woolen factories and flouring-mills could be erected to good advantage. Excellent blue limestone, and a very fine quality of sandstone, admirably adapted for building purposes, are abundant. Miners will find inexhaustible beds of lead ore, and carpenters, cabinetmakers, tinners, brick and stone masons, silversmiths, and shoemakers will find good openings for business.

CARTHAGE, the county-seat, is on the edge of a large prairie, extending south and east; while on the north and west are the outskirts of timber. The court-house and jail are among the best public buildings in the Southwest.

Carthage has a population of 300; **Sarcoxie,** 250; **Fidelity,** 160; **Sherwood,** 50; **Avilla,** 30. Distance from Carthage to nearest point on P. R. R., Syracuse, 165 miles; to St. Louis, 350; to Jefferson City, 200 miles.

JEFFERSON COUNTY.

This county is situated in the east central part of the State; bounded on the east by the Mississippi River, on the west by Franklin and Washington Counties, north by St. Louis, and south by Washington, St. François, and St. Genevieve Counties; and has an area of 654 square miles.

The population of Jefferson County in 1830 was 2592; in 1840, 4296; in 1850, 6928; in 1856, 8507; and in 1860, 9365. Acres of land subject to taxation in 1859, 348,895, valued at $1,523,300; and 451 slaves, valued at $208,585. Total valuation of property, $2,282,197.

Physical Features.—In the northern and eastern portions of the county the land is generally undulating and fertile; and in the western and southern, hilly and sterile. A great proportion of the county is heavily timbered, and the land more valuable for mineral than for agricultural purposes. The best farming lands are found along the Maramec and Big Rivers, and Platin, Sandy, and Joaquim Creeks. Big River is the largest stream that traverses the county, which, in ordinary seasons, would be considered a creek; but having its source in a hilly country, rises rapidly till it becomes emphatically a "Big River," but does not retain its maximum height but a few hours—running out very rapidly. The county is drained by the Maramec, which forms part of its northern boundary, and by Platin, Joaquim, and Sandy Creeks.

The scenery along some of the streams is beautiful, and the limestone bluffs of the Mississippi about Selma and Rush Tower have an elevation of from 250 to 300 feet, which, at a distance, bear a remarkable resemblance to artificial towers. Formerly there were shot towers on the perpendicular cliffs at Selma and Herculaneum. Along the line of the Iron Mountain Railroad are solid masses of white limestone, deposited in horizontal strata, overhanging the track. The scenery along this route is grand and picturesque, especially interesting to the geologist.

The soil in the northern and eastern portions of the county is adapted to farming purposes, while there is scarcely any of the "gravelly ridges" but would produce excellent fruit of most kinds, and especially peaches and grapes. More attention is being given to this branch than formerly. Mr. Baker, near the Iron Mountain Railroad,

has now 9000 peach-trees in one orchard, and we have seldom seen better peaches anywhere than are produced in Jefferson and Washington Counties.

Minerals.—This county appears to contain an inexhaustible amount of lead ore; and some extensive deposits of brown hematite iron ore, which in township 39, range 4 E., projects in large masses above the surface of the ground. There have been upwards of 50 lead mines or "diggings" opened in the county, where more or less galena has been taken out, and about half the number of mines (say 27) are now being worked. There are three extensive steam lead furnaces—Sandy, Mammoth, and Vallé's—but we are unable to give the amount of lead smelted at each for any given time. The principal mines are in township 38, ranges 4 and 5 E.; township 39, ranges 3, 4, and 5; township 40, range 3; township 41, ranges 4, 5, and 6 E.; and the ores are of the sulphuret variety.

There is on the Platin Creek, extending from its mouth several miles up that stream, a bluff, 30 to 100 feet high, of white sand, (pure silex,) which has within the last year attracted the attention of flint-glass manufacturers of Pittsburg and Wheeling. In 1859 there was 2000 tons sold to Pittsburg, and in 1860 a still greater amount was contracted for by the same parties. The sale this season will doubtless double that quantity.

This sand has navigation from the bluffs most of the year by barges, which renders it so easy of access as to defy competition.

There are no large towns in this county.

HILLSBOROUGH, the seat of justice, is situated south from the center of the county, upon the high lands between the Mississippi and Big River, about 4½ miles from Victoria, on the Iron Mountain Railroad, and 30 miles from St. Louis. The town was first settled by John Carver and others, in the spring of 1828, and contains one church, a Masonic Lodge, school-house, hotel, and about 150 inhabitants.

De Soto is a promising new town, on the Iron Mountain Railroad, 42 miles from St. Louis, and 6 from the county-seat. It has grown to its present size as rapidly as any other town in the State. It now contains Methodist church, 3 stores, steam saw and grist mill, 2 hotels, and a large female seminary is in course of erection. Population about 275.

Selma is situated on the Mississippi River, 35 miles below St. Louis, and 5 miles east from the Iron Mountain Railroad, and rendered noted by "Selma Hall," the residence of Col. Ferd. Kennet, which is the finest residence in the State.

Victoria, 39 miles from St. Louis, is a new town. T. M. Espy has here an excellent hotel, and the only railroad eating-house on this road.

JOHNSON COUNTY.

This county, situated in the western part of the State, is bounded on the north by Lafayette, which separates it from the Missouri River, and on the west by Cass, a county bordering on the Kansas line. Population in 1860, 14,985.

Physical Features.—A great proportion of this county is fertile prairie land, level or slightly undulating, interspersed here and there with forest trees; while in the valley of Clearfork Creek, and of some other streams, is found most excellent timber, consisting of hickory, oak, and walnut, principally. In the early settlement of this county, the extent of the prairies was considered an objection by persons from densely-timbered countries; but since the prairie fires have been kept out, groves are growing up rapidly; besides, immense beds of stone-coal have been found convenient, which remove all those objections. The county is well watered by the Blackwater and its tributaries, many of which originate in never-failing springs. The saline springs in this county are highly prized by stock growers. On the south half of section 6, township 44, range 24 W., is found a stratum or vein of plumbago, or black oxyde of manganese, which is susceptible of a fine polish, makes a clear black mark, and is used by the citizens for pencils. On the same section is excellent hydraulic limestone; and some of the best bituminous coal in the State exists in this region, some strata being nearly five feet thick. The limestone through the county embraces several varieties, some of which contain numerous fossils. Several specimens of petrifactions have been found in the southeast corner of the county—principally of wood.

Soil and Productions.—A very great proportion of the soil is rich and well adapted to agriculture, producing a large yield of all kinds of grain, grasses, fruits, and vegetables. Stock growing would be a profitable business in this county, and the early completion of the Pacific Railroad through the county will afford a cheap and speedy transit to market.

Natural Advantages.—Johnson County is an exceedingly fertile body of land, well watered with springs and streams, with an abundant supply of limestone and timber, and immense beds of stone coal.

Most kinds of mechanics are in demand, especially "house-builders," carpenters, masons, and plasterers. Unimproved land is worth from $10 to $40, and improved, from $12 to $50 per acre.

Churches and Schools.—The Methodist, Presbyterian, Baptist, and Christian denominations all have organizations, and there are many excellent schools, both public and private, in the county.

WARRENSBURG, the county-seat, is near the center of the county, has a pleasant site, watered by clear, cool springs, and surrounded by an excellent and well-settled farming country. The town was incorporated November 23, 1855, and now contains 2 newspapers, (Weekly Union and Western Missourian,) a branch of the "Union Bank of Missouri," an excellent male and female institute, several good common schools, Presbyterian, Methodist, Baptist and Christian organizations, with 2 churches, several saw-mills, 2 steam flouring-mills, and all kinds of mechanics, professional men, etc. Population 1500.

Knobnoster is situated in the east central part of the county, 10 miles from the county-seat, upon the Pacific Railroad. The town derives its name from a prominent mound or knob that stands isolated in the plain. Knobnoster was first settled in 1854, and now contains a church, Masonic Lodge, seminary, flouring-mill, and about 300 inhabitants.

Kingsville is situated upon a high table-land, from which the streams to the north empty into the Missouri, and the tributaries to the Osage bear to the south. The town is on the Pacific Railroad, and connected by stage with the following points: Warrensburg, 20 miles; Georgetown, 50; Otterville, 63; Pleasant Hill, 12. The town is surrounded by a high, fertile prairie, interspersed with groves of timber, with coal banks open in the town, and limestone and clay for brick near at hand. The town was laid out by General William M. King & Sons, in 1858, and now contains a church, academy, newspaper office, and numerous business houses. Population 200.

Of other towns, there are **Columbus,** population 250; **Fayetteville,** 250; **Rose Hill,** 150; and **Cornelia,** 150.

Holden is a thrifty new town on the Pacific Railroad, 10 miles from the county-seat, surrounded by a good farming country, prairie and timber, and a very superior quality of stone coal convenient. Population 150.

KNOX COUNTY.

This county is in the northeastern part of the State, separated from the Mississippi River by Lewis County, from the Iowa line by Scotland County, and bounded on the west by Clarke and Macon, and on the south by Shelby County, and contains an area of 504 square miles. Population in 1850, 2895; in 1856, 5484; in 1860, 7761.

Physical Features.—The face of the country is undulating, with a desirable division of prairie and timber land. It is intersected by North, Middle, and South Fabius, and by the north fork of Salt River, and several of their tributary creeks and branches.

EDINA, the seat of justice, is situated near the center of the county, on the South Fabius River, and contains about 300 inhabitants. It was incorporated February 16, 1857.

Newark is situated in the southeast corner of the county, near the South Fabius, and 18 miles from the county-seat. It was first located and settled in 1835, and a post-office established in 1841. It is connected by stage-lines with Paris, 36 miles; Lagrange, 27; Palmyra, 31; and Monticello, 18 miles. It contains 4 churches—Methodist, Baptist, Christian, and Presbyterian—1 Lodge each of Masons and Odd Fellows, a good representation of business houses, and 300 inhabitants.

The name of **Prairie City** was changed to **Jeddo**, March 10, 1859; and that of **Centreville** changed to **Colony**, February 14, 1857.

LACLEDE COUNTY.

This county is situated in the south central part of the State, bounded on the north by Camden, south by Wright and Webster, east by Pulaski and Texas, and west by Dallas County; was formed in 1849, from a portion of Pulaski, and named in honor of Pierre Laclede Liguest, the founder of St. Louis, and was organized February 24, 1849. Population in 1860, 5200.

Physical Features.—This county is situated upon the high tablelands of the Ozark range, and presents a great variety of surface,

from the level or moderately undulating prairie, to rugged hills and miniature mountains. In the vicinity of Big Niangua Gasconade, and Osage Fork, the hills range from 155 to 500 feet in height, separated from each other by deep and narrow valleys. From this elevation to the west three streams—Spring Hollow, the Mountains, and Sweet Hollow—flow into the Niangua. Goodwin Hollow extends north to the Auglaize, a tributary of the Osage; the eastern and southern parts of the county are drained by the Osage Fork, Gasconade, Bear, Brush, Cobbs, and several smaller creeks and tributaries. An erroneous impression is generally formed of these elevated table-lands, from the manner in which they are represented upon many of the maps. An article is devoted to the correction of these errors. (See "Topography of Ozark Mountains.")

Soil and Productions.—The soil of the upland is various; the light and gravelly portions are well adapted to fruit culture, and particularly favorable for grapes; while in the post-oak flats, the subsoil of clay comes nearer the surface. For many purposes this soil is superior to that of the alluvial, and has produced as high as 55 bushels of wheat to the acre, from 800 to 1200 pounds of tobacco, and most excellent timothy and other grasses. There is in the county probably 100,000 acres of rich, alluvial bottom-land, much of which is under a good state of cultivation. Farmers have realized of hemp, 1500 pounds to the acre; tobacco, 1200 pounds; corn, 100 bushels; wheat, 50; rye, 30; barley, 30; oats, 40; buckwheat, 20; potatoes, 200; onions, 100; beets, 150; carrots, 150; turnips, 300; timothy, 4 tons; clover, 3; Hungarian grass, 3; also, of apples, peaches, and cherries, an abundant yield. These figures are above the average product. One farmer had a few acres in cotton, and reports favorably of the experiment.

Minerals.—Brown hematite and specular iron ores were reported by the State Geologist to exist in township 36, ranges 14 and 16 W., and sulphuret lead ore in the last-named locality.

Industrial Pursuits.—There are in the county, of newspapers, 1; lawyers, 5; physicians, 10; merchants, 11; grocers, 3; druggist, 1; silversmith, 1; tinner, 1; blacksmiths, 10; wagon-makers, 4; saddler, 1; tailors, 2; shoemakers, 2; cabinetmakers, 2; carpenters, 10; tobacco manufacturer, 1; saw-mills, 6, (1 water, 5 steam power;) flouring-mills, 7, (1 steam and 6 water power.)

Churches and Schools.—There are 2 churches—1 Union and 1 Free, where the several denominations worship. Of schools, there is a high school, located at Lebanon, and 34 district school-houses.

The soil and climate adapt it to agricultural or manufacturing pur-

poses, stock raising, or vine growing. The southwest branch of the Pacific Railroad will soon be completed, traversing the county, and affording speedy and cheap transit to St. Louis, there connecting with water and rail communication to all parts of the Union.

The following table exhibits the growth of the county since 1857:

	1857.	1859.
Land assessed.....acres	48,625	122,092
Valuation.....$	194,223	$449,000
Polls.....	707	796
Slaves.....	223	250

And this, notwithstanding the fact that there are over 130,000 acres of railroad lands in this county that are not in market, and the same amount has been raised to double the usual government price.

Natural Advantages.—Laclede County has within her borders many of the elements of agricultural and mineral wealth: a great variety of soil adapted to the various purposes of the farmer, nurseryman, or stock grower; an abundance of timber; a profusion of clear, rapid streams, and strong crystal springs; fine water power for manufacturing purposes upon the Osage Fork, Gasconade, and other streams; iron and lead in several parts of the county, which may be found in paying quantities; a good demand for farmers, mechanics, and manufacturers, with the prospect of an early completion of the southwest branch of the Pacific Railroad, which will pass through the center of the county, affording a cheap and speedy transit with the best market in the West, and to St. Louis, thus securing railroad and water communication with all parts of the world.

LEBANON, the county-seat, has a beautiful situation upon the table-lands, near the center of the county, and is surrounded by a fine agricultural region. It is the only town of note in the county, and has a population of 400, and a fair representation of business houses.

LAFAYETTE COUNTY.

This county is situated on the right bank of the Missouri River, and separated from the Kansas line by Jackson County, which bounds it on the west. Population in 1860, 20,440.

Face of the Country.—The general character of the land in this county is level or gently undulating; however, some portions are broken and rough. Passing over the country between Marshall and

Lexington, the traveler sees some as fine country as there is in Missouri. The landscape is beautiful and imposing. In summer, the prairies resemble a vast carpet of green spread out before him, dotted here and there with herds of cattle, that crop the luxuriant native grasses, amid flowers of every hue and color of the rainbow, which perfume the atmosphere while they dazzle the eye of the beholder, and he can hardly dismiss the idea that the cattle are trespassers upon this artificial parterre, which seems to have been cultivated and carefully dressed, and set in groves and skirted along the streams with beautiful parks. Some of the finest prairies in the county are east of **Dover.** This town was settled a number of years ago, and is situated in a grove named **Terre Beau,** (beautiful land.) Terre Beau Creek and Big Sniabar furnish water power. The county contains a number of fine springs and rapid streams. Oak, hickory, mulberry, ash, walnut, and cottonwood timbers are abundant along the streams, and appear in groves throughout the county. In the southern part of the county are several elevations, called Wagon Knob, Buck Knob, etc. The former is on the head of Big Sniabar Creek, and has an elevation of about 150 feet above the level of the prairie, affording an extensive view of the surrounding country, of the towns of Chapel Hill in Lafayette, Columbus in Johnson, etc.

History.—The following list of county officers, compiled by Morris E. R. Locke, Esq., may be relied upon as correct:—

List of Circuit Judges.

Hon. David Todd.....from 1820 to 1831
Hon. John F. Ryland..... " 1831 " 1849
Hon. Henderson Young..... " 1849 until his death, which took place in the year 1854.
Hon. William T. Wood.....from 1854 to 1856
Hon. Russell Hicks..... " 1856 Sept. 26, 1859
Hon. Robert G. Smart..... " 1850 to fill the vacancy occasioned by the resignation of Hon. Russell Hicks.

List of Circuit Clerks.

Young Ewing.....from 1821 to 1836
William Spratt..... " 1836 " 1848
Lewis W. Smallwood..... " 1848 " 1860
John P. Bowman..... " 1860 " 1866

List of Sheriffs.

William R. Cole.....from 1821 to 1824
Markham Fristoe..... " 1824 " 1826
James Bounds..... " 1826 " 1830
James Fletcher..... " 1830 " 1834

Daniel McDowell	from	1833	to	1836
James Bounds	"	1836	"	1837
Daniel McDowell	"	1837	"	1842
William Anderson	"	1842	"	1846
Thomas G. Smith	"	1846	"	1848
James Clowdsly	"	1848	"	1850
Alfred Nichols	"	1850	"	1852
M. W. Withers	"	1852	"	1856
John P. Bowman	"	1856	"	1860

Oliver Anderson, to fill the vacancy occasioned by the resignation of John P. Bowman.

Hamilton R. Gamble, first circuit court attorney for this district.

The first grand jury for this county (then Lillard) was composed of the following persons: William Lillard, (foreman,) William F. Simmons, John J. Heard, John Lillard, Thomas Linwell, David Gennings, Jesse Coxe, James Bounds, Jr., Isaac Clark, William Wallace, Christopher Mulkey, Jacob Catron, John Bowman, George Parkerson, Thomas Hopper, Jacob Lowrie, John Robison, Thomas Fristoe, William Fox, and Samuel Weston.

The first indictment was against John Salady, for trespass, assault and battery.

The following are the names of the first attorneys admitted to practice in this county: Hamilton R. Gamble, Payton R. Hayden, and John J. McKinney.

Judge John F. Ryland, who is still practicing at the bar, was admitted in 1823.

Edward Stratton, the present county clerk, was the first county court clerk, as also the first probate judge. Walter M. Smallwood is the present probate judge.

Lexington was incorporated as a city March 8, 1845.

Soil, Productions, etc.—The soil in this county is generally very productive, and well adapted to all the purposes of the farmer or stock-grower. We have statistics from farms which have produced, to the acre, of hemp, 2200 pounds; tobacco, 800 pounds; corn, 100 bushels; wheat, 25 bushels; barley, 80 bushels; timothy, 2 tons; Hungarian grass, 3 tons; and fruit and vegetables in proportion. The average price of improved lands is from $15 to $50 per acre; of unimproved, $8 per acre. As will be seen, by reference to the table showing the full statistics of each county, in another chapter, Lafayette is the largest tax-paying county in the State, excepting St. Louis. The wealth of the county, however, as shown by the tax-books, exhibits a falling off from the estimate of 1858 of $800,370. In 1858 it was $10,265,878. This decrease is in land and slave property; there having been a decrease of some 200 slaves in one year.

Inducements to Immigration.—Of merchants and professional men, this county has a full supply for the present. The class of people most needed are qualified school teachers, practical farmers and mechanics, who have capital, to improve land or establish manufactories; also carpenters, plasterers, and masons. They will find here good schools and churches, good society, fertile farming land, healthy climate, wood and stone coal abundant, springs and rapid streams of water, etc.

LEXINGTON, the county-seat, has a beautiful, high, and healthy situation upon the river, and is the shipping point for a large and fertile agricultural district. This was formerly an outfitting point for the Santa Fe and New Mexico trade, and the land office having been located here for a number of years, has also added to the importance of the city as a business point. Lexington now contains 2 ably-conducted newspapers, 2 banks, 15 lawyers, 9 physicians, 22 merchants, 7 grocers, 4 druggists, 3 silversmiths, 2 tinners, 8 blacksmiths, 2 wagon-makers, 3 saddlers, 6 tailors, 4 shoemakers, 5 cabinetmakers, 9 carpenters, 3 tobacco manufacturers, 1 saw-mill, and 3 flouring-mills, (steam power,) 2 hotels, etc. (We are unable to give full statistics of Lexington.)

It appears, by an assessment and census recently taken of Lexington, that the total number of inhabitants is 5200. The value of taxable property in the town is $2,882,410, of which $947,219 is real estate, $308,657 slaves, and $1,573,544 money and notes. The value of buildings erected in 1859, and completed, was $140,300; those not completed, $14,100. Value of public institutions, etc. not taxable, $224,000. The number of slaves is 5737, valued at $2,191,451. Slaves have decreased 171 since the last assessment, at which time 5966 were reported, valued at $2,433,015.

The total amount of manufactures and produce shipped from Waverly and St. Thomas, in 1859, was $256,615; total imports for same time, $102,000. Bricks made and sold, 1,136,000. Value of improvements, $71,000. There are of business houses in Waverly and St. Thomas the following: attorneys, 3; physicians, 5; Lodge Good Templars, 1; Lodge Masons, 1; Lodge Odd Fellows, 2; Young Men's Lyceum, 1; post-office, 1; printing-office, 1; dry-goods houses, 6; grocery stores, 3; drug stores, 2; tin and stove store, 1; cabinet wareroom, 1; commission merchants, 3; watch and clock, 1; hotel, 1; schools, 2; churches, 3; flouring-mill, 1; livery stable, 1; blacksmith shops, 2; plow factories, 2; wagon shops, 2; hemp brake shops, 2; steam rope factory, 1; cabinet shop, 1; saw-mills in vicinity, 2; warehouses, 5; carpenters, 20; painters, 2; milliners, 2; saddler

and harness maker, 1; tailors, 2; boot and shoe shops, 2; brick masons, 6; plasterers, 3; coal yard, 1; pork house, 1; brick yards, 6; and United States express office.

The population of the principal towns in the county is as follows: **Lexington**, the county-seat, 5200; **Waverly**, (name changed from **Middletown**, March 2, 1849,) 2000; **Wellington**, 400; **Dover**, 200; **Chapel Hill**, 200; **Napoleon**, (incorporated November 21, 1857,) 300.

LAWRENCE COUNTY.

This county is situated in the southwestern part of the State, bounded on the north by Dade, east by Greene and Christian, south by Barry, and west by Jasper and Newton, which separate it from the Kansas line, and contained, in 1850, a population of 4851 inhabitants; in 1856, 7613; and in 1860, 9062.

Physical Features.—The face of the country is undulating, and in some sections broken, with prairie and timber well diversified. The principal streams are Spring River, Turnback-Sac, Honey Creek, Clear Creek, and Stahl's Creek. These streams have their sources at large springs, and are peculiarly clear, and flow over gravel and rocky beds. The valleys are fertile, well timbered, and susceptible of the highest degree of cultivation, while the high prairies, with their broad acres of grass, are unsurpassed for grazing. The mildness of the climate, bountiful supply of living water, etc., render this a desirable portion of the State for stock growing and fruit culture, especially the grape. The natural advantages of the county are very great, but there is a deplorable lack of energy manifest among many of the leading men; consequently the various industrial pursuits are not represented in a manner corresponding with their advantageous location and natural resources.

History.—Lawrence County was formed from Dade and Barry, and organized in 1844–5. The organization of the county was celebrated by a "Bran Dance," on the 4th of July, 1845, which we will speak of more particularly to "show how the people do up such matters out West." In preparing for this celebration and sale of lots, invitations were sent to neighboring counties, and promptly responded to by hundreds who came to celebrate the national anniversary, and the birth of a new county. Where the court-house now stands was a dense piece of woodland, and an arbor was made from

the black jacks, and other forest trees, beneath which the sale was held, and afterward a grand barbecue served up, speeches made, and a spirited time was enjoyed by all. After the business and the barbecue had received proper attention, the arbor was cleared away, and bran strewn over the ground to prepare it for dancing. We are assured by Major Wear, that this was one of the most pleasant celebrations, and most heartily enjoyed, by old, middle aged, and young, that had ever been held in this section of country. All joined in the dance, and everything passed off harmoniously.

Minerals.—Lead and iron ore have been discovered—the former in several localities near Mount Vernon, the latter four miles from Mount Vernon, on the place of William Davis, on Honey Creek. Copper ore was found by the State Geologist on section 2, township 29, range 25 W.

The water power is an important feature in Lawrence, and springs abound in various parts of the county.

MOUNT VERNON, the county-seat, was laid out in 1845, by the county, as a seat of justice, and the first court was held in October of the same year, at the house of George White, Esq., and presided over by Hon. Chas. S. Yancy; Thomas Ash was the first clerk; Washington Smith,* first sheriff; Jno. Williams, one of the oldest settlers, was foreman of the first grand jury held in this county. Mount Vernon occupies an elevated site near the center of the county, on a clear, bold stream, a tributary of the Neosho or Grand River of the South. Mount Vernon was incorporated as a city, November 4, 1847, and now contains 350 inhabitants.

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* A good fighting story is told of Smith. It appears that in 1838 Smith had a sharp fight with an Osage Indian about a trap. The Indian had set the trap for a wolf, and the wolf broke the chain and ran away with it. The Indian accused Smith of stealing the trap; a fight ensued, which lasted about two hours, as the story goes, neither proving to be victor, when they made a draw game of it and both went together to hunt the trap; they found it where the wolf had released himself from it, and returned home mutual friends.

LEWIS COUNTY.

This county is situated in the northeast corner of the State, bounded on the east by the Mississippi River, and on the north by Clarke County, which reaches the Iowa line. The first settlement made here was by John Bogarth in 1824, and the number of inhabitants in 1860 was 11,681.

This county is watered by the Waconda, North, South, and Middle Fabius, furnishing numerous good mill sites. There are also numerous springs of pure water, which are invaluable to farmers. The surface is undulating and diversified, about half of the county being well timbered with forests or groves distributed along the water-courses, and separated by beautiful upland meadows or prairies, the soil of which is deep, fertile, and easily cultivated. The largest yields, per acre, that we have note of, are wheat, 25 bushels; corn, 80; rye, 12; barley, 20; oats, 50; buckwheat, 40; potatoes, 150; onions, 200; beets, 200; turnips, 500; timothy, 3 tons; clover, 2 tons; Hungarian grass, 5 tons; tobacco, 1200 pounds. Unimproved lands sell at from $3 to $15 per acre, and improved at from $6 to $75, depending upon location. Coal has been discovered near Monticello, and in some other portions of the county. Limestone abounds in various localities in the county.

Churches and Schools.—The principal denominations represented are Protestant Episcopal, organized in 1830, Methodist Episcopal, Baptist, and Catholic. Of Schools, there are 4 academies, 1 college, and 36 public schools in the county. The Canton Female Seminary and the Christian University (College) are represented as being well conducted, and in prosperous circumstances. The number of scholars taught in 1857, in the 36 schools, by the 72 teachers, (who received $7145 93,) was 1672. Amount raised same year to build and repair school-houses, $1661 53. Amount apportioned to the county for school purposes in 1859, from the State School Fund, $2441 91.

Industrial Pursuits.—Of business houses in the county there are lawyers, 14; physicians, 20; merchants, 30; grocers, 7; druggists, 5; silversmiths, 3; tinners, 3; blacksmiths, 17; wagon-makers, 6; saddlers, 7; tailors, 8; shoemakers, 11; cabinetmakers, 2; carpenters, 30; tobacco manufacturers, 2; saw-mills, 8; coopers, 9; and flouring-mills, 6.

MONTICELLO, the seat of justice, is situated near the center of

the county, on North Fabius River, contains 2 churches, a Masonic Lodge, high school, 2 hotels, a variety of business houses, and 250 inhabitants.

Canton, the shipping point for the county, is on the Mississippi, 175 miles above St. Louis, and 11 miles from the county-seat. It was first settled in 1827 by Messrs. Sinclair, Hawkins, Pritchard, Bogarth, and Myers. The town contains churches of the Methodist, Presbyterian, Lutheran, German Methodist, and Christian denominations; a female seminary, (Methodist;) a Christian university, with an endowment of $150,000; 2 Lodges of Masons, and 1 of Odd Fellows; a branch of the Bank of Missouri, and a full representation of business houses. Population about 2500.

La Grange is situated on the Mississippi River, 12 miles from the county-seat, and contains Presbyterian, Baptist, Methodist, Christian, and Lutheran Churches; a Lodge of each, Masons and Odd Fellows; branch of Union Bank; a weekly newspaper; Baptist Female Seminary; an academy; several saw-mills and grist-mills; manufactories, stores, shops, etc.; and about 2000 population.

LINCOLN COUNTY.

This county is situated in the eastern part of the State, bounded on the east by the Mississippi River, north by Pike County, west by Pike, Montgomery, and Warren, and south by Warren and St. Charles Counties.

Physical Features.—This county possesses both prairie and timber, level bottom-land, and undulating and broken upland. It is drained by Cuivre (or Copper) River and its lengthy branches, and by several small creeks which empty into the Mississippi. A wide bottom extends along the river, which is exceedingly fertile; and in seasons of very high water, portions of it are subject to overflow. Hard-wood timber and good building stone are abundant throughout the county.

History.—After the massacre in the Gilbert's Lick Settlement, (now in Marion County,) by the Upper Mississippi Indians, in 1812, the settlers in St. Charles District erected some seven or eight forts, to which a portion of the inhabitants resorted; while others held themselves ready to flee there, in case it should be thought necessary. Four of these forts were in what is now Lincoln County, namely, Stout's Fort, Wood's Fort, Fort Howard, and Fort Cape au Gris.

Troy, the county-seat, now occupies the former site of Wood's Fort, and Monroe that of Fort Howard, which was a large and commodious fort, requiring three weeks' labor of seventy men to erect it. Fort Cape au Gris derived its name from a promontory or cape of fine grit sandstone directly opposite, on the eastern bank of the river. The present village and shipping point, some ten miles above the mouth of Cuivre River, occupies the site of the old fort. The two last named were the most important forts or stockades in this county, and the last ones in use. Lincoln County was formed from a part of St. Charles County in 1818, and a portion of it was at an early day covered with Spanish grants, which retarded its settlement. Monroe and Alexandria were formerly seats of justice, but have now ceased to exist. The former was situated on the north bank of Riviere au Cuivre, 18 miles from St. Charles, and 5 miles west from the Mississippi River. In 1823 the Cuivre was considered navigable to this place. Alexandria was the county-seat in 1823, situated in the northern part of township 49, range 1 W., 12 miles from the Mississippi, and $1\frac{1}{2}$ west from the Cuivre. It was laid off in the autumn of 1821, and was once a populous village. Near Fort Howard, at the chain of rocks on the Cuivre, a battle was fought between some of Black Hawk's warriors and the rangers. The first American settlers were from Kentucky and Virginia. In September, 1821, Lincoln County contained 1674 inhabitants; in 1830, 4059; in 1840, 7449; in 1850, 9422; in 1856, 11,630; and in 1860, 14,251.

Industrial Pursuits.—There are in the county, of merchants, 20; printing-office, 1; lawyers, 11; physicians, 17; grocers, 6; druggists, 2; carpenter shops, 9; cabinet, 2; jeweler, 1; blacksmith shops, 10; wagon shops, 3; saddler shops, 3; tailor shops, 4; shoe shops, 4; painters, 6; architects, 3; brickmakers and masons, 8; hotels, 4; school teachers, 8; flouring-mills, 7; saw-mills, 3.

TROY, the county-seat, is 2 miles north from Cuivre River, 14 miles from the Mississippi, and is surrounded by an excellent farming district, well settled by planters and stock-growers. It was located and settled in 1816, by Deacon Cottle and Zadock Woods, and occupies the former site of Wood's Fort. It contains 4 churches, (Presbyterian, Baptist, Methodist, and Christian,) a Masonic Lodge, newspaper printing-office, good school-houses, brick court-house, and about 600 population.

Louisville is in the northwestern part of the county, 24 miles from Troy. It is said to have been settled by M. Cox and others as early as 1819. Population 200.

New Hope is in the north central part of the county, contains a

Baptist Church, high school, and a good representation of business men. Population 175.

Cape au Gris is situated on the Mississippi River, and the principal shipping point of the county. Population 100.

Auburn is in the north central part of the county, on the Cuivre River, 12 miles from Troy, and 20 from Bowling Green, Pike County. This town contains Methodist and Cumberland Presbyterian Churches, a Masonic Lodge, an academy, etc. Population 250.

Milwood is a post village in the western part of the county.

LINN COUNTY.

This county is situated in the northwest portion of the State, north of Chariton, which is on the north shore of the Missouri River. The county has an area of 650 square miles, has a large proportion of rolling prairie, interspersed with woodland. It is watered by upwards of twelve streams, traversing the county from north to south, and emptying into Grand River. The larger streams are Locust Creek, West Fork Locust Creek, Elk, Turkey, Yellow, and Little Yellow Creeks, some of which afford excellent water power.

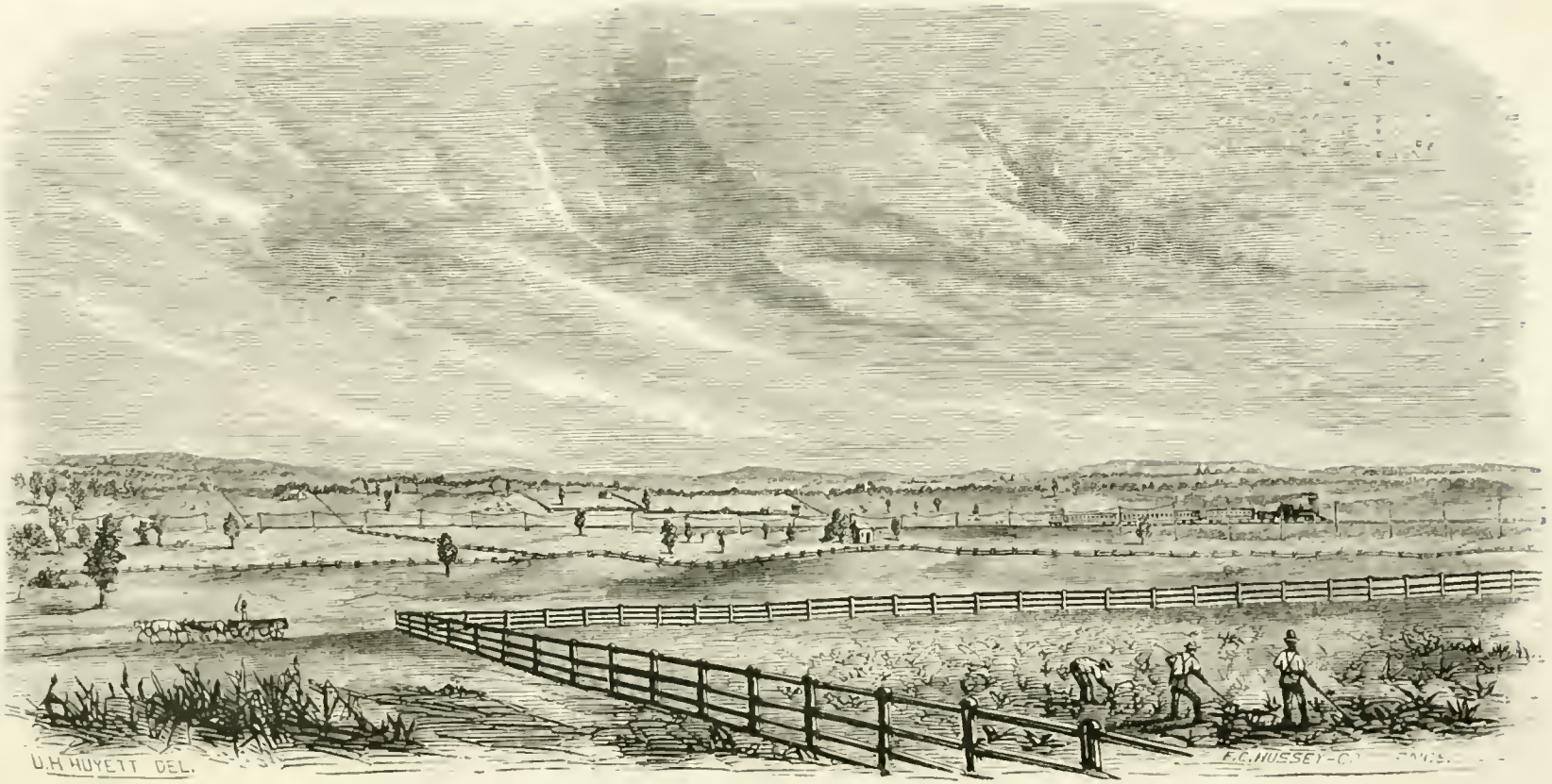
Soil and Productions.—The soil of the county is generally very fertile—principally prairie, with a good supply of woodland well distributed. All kinds of grain, grasses, and fruit of this latitude produce well here. Unimproved lands are worth from $5 to $15 per acre, and improved from $10 to $20.

Timber.—The following embraces the kinds of timber most abundant in this county: walnut, elm, hackberry, oaks, ash, cherry, hickory, mulberry, sycamore, linn, maple, birch, and cottonwood.

This county was first settled in 1832 by William Boyer and others. In 1840 it contained a population of 2245; in 1850, 4060; and in 1860, 9152.

Churches and Schools.—There are 5 private schools and 60 free schools, well conducted and liberally patronized. In 1857 there were 48 school-houses, and $3131 raised to build and repair school-houses. The amount of State school money apportioned to the county for 1859 was $2085 78. Of church members, there are 100 N. S. Presbyterians, 500 Methodists, 500 Baptists, and 150 Reformers.

Industrial Pursuits.—There are in this county 1 newspaper, 10



PRAIRIE FARMS IN MISSOURI.

lawyers, 12 physicians, 16 merchants, 6 grocers, 5 druggists, 1 silversmith, 1 tinner, 17 blacksmiths, 3 wagon-makers, 2 coopers, 5 flouring-mills, (2 water, and 3 steam power,) 20 saw-mills, (6 water, and 14 steam power,) and 8 hotels.

Natural Advantages.—The principal inducements to settlement here are fertile soil, an abundance of timber, water, and good building stone, inexhaustible beds of stone coal throughout the county, good society, and rapid and easy communication to all points east and west, by the Hannibal and St. Joseph Railroad, which traverses the county.

LINNEUS, the county-seat, is pleasantly situated near the center of the county, 6 miles north from the Hannibal and St. Joseph Railroad, in the midst of a fertile and well-settled farming district. The town was first settled in 1856, incorporated March 2d, 1859, and has now about 1000 inhabitants; and more energetic, wide-awake business men than those of Linneus are seldom found. This place contains 3 churches—Methodist, Presbyterian, and Christian—1 Lodge of Masons and 1 of Odd Fellows, a weekly newspaper, high school, and a variety of stores, shops, etc.

Laclede is a brisk new town on the Hannibal and St. Joseph Railroad, 97 miles from St. Joseph, 109 from Hannibal, about 7 from the county-seat. The town possesses many natural advantages, which the citizens will not fail to make the most of.

Wyandotte, on the railroad, 18 miles from the county-seat, first settled in 1856, has a population of 200.

Of other towns, there are **Brookfield, Franklin, St. Catherine, Thayer, Buckland, North Salem,** and **Enterprise.**

LIVINGSTON COUNTY.

This county is situated in the north-northwestern part of the State, bounded on the east by Linn and Chariton, west by Daviess and Caldwell, north by Grundy, and south by Carroll County, and contains an area of 530 square miles. Named in honor of Edward Livingston, Secretary of State under President Jackson. The population of this county in 1840 was 4325; in 1850, 4229, (76 decrease;) in 1856 it was 6495; and in 1860, 7462.

Physical Features.—The surface of the county is generally level or slightly undulating, and principally prairie. (See illustrations, "Prairie Farms in Missouri," and "View in Grand River Valley,"

also the chapter devoted to a description of the "Grand River Country.") The county is well watered by Grand River, which traverses the center of the county, and several of its important tributaries, which pass through the northern part of the county.

The Soils of this county are very rich, and well adapted to all purposes of the farmer or stock grower. This may be considered as an excellent agricultural section.

Coal has been found in several localities, and banks are already opened near Utica, and at other points in the county, which will in some measure compensate for the scarcity of timber.

CHILLICOTHE, the county-seat, was first settled in 1837, by John Graves and others, and is one of the most important places on the line of the Hannibal and St. Joseph Railroad. Being on the high lands, or divide, which extends north into Iowa, accessible by good roads from all directions, its advantageous locality and the liberality and enterprise of its business men have made it a wholesale point for an extensive region of country, reaching to the second and third tiers of counties in Iowa. The Blue Mounds, or dividing lands between the waters of Grand River and the Missouri, lie off some 10 miles to the southwest; and the landscape view from the town is extensive and beautiful. This place contains 5 churches—Methodist, Baptist, Episcopal, and 2 Presbyterian—a Baptist college, female seminary, Masonic and Odd Fellows' Lodges, 1 newspaper, etc. Population 3000.

Utica is a brisk new town, 5 miles west from Chillicothe, on the railroad, and, like Chillicothe, is surrounded by a beautiful and fertile region of country. The town is on the west side of Grand River, "at the head of navigation," and occupies a site elevated and healthy. The view in Grand River Valley was taken from Utica. This place contains 1 newspaper, (see list of newspapers,) 4 churches—Baptist, Episcopal, Methodist, and Presbyterian—a high school, Masonic Lodge, Lodge of Good Templars, and several stores and mechanics' shops. Population about 1000.

Bedford is situated on the right bank of Grand River, 18 miles from the county-seat, and 6 miles south from the railroad, and is in township 56, range 22 W. Small steamboats can navigate Grand River to Bedford from four to six months of the year. Bedford was first settled in 1857, by A. Alexander, Dr. John Wolfskill, George Monroe, and others, and now contains a Methodist church, several business houses, and 150 inhabitants.

Dawn, a post village, is situated in Blue Mound Township, 11 miles from Chillicothe, and 4 from the railroad. Population, 50.

Industrial Pursuits.—There are in Livingston County 2 newspa-

pers, 25 merchants, 11 lawyers, 9 physicians, 10 school teachers, 3 book and stationery stores, 1 architect, 25 carpenters and builders, 4 cabinet shops, 3 druggists, 3 dentists, 1 oculist, 6 family groceries, 3 jewelers, 3 bakers, 4 hotels, 10 blacksmiths, 7 wagon shops, 3 plow and agricultural implement makers, 3 coopers, 3 shingle manufactories, 7 saw-mills, 4 flouring-mills, 3 saddlers, 6 tailors and clothiers, 6 shoemakers and dealers, 2 tin and stove dealers, 4 hotels, 3 painters, 5 brick-makers, and 3 tobacco manufactories.

MACON COUNTY.

This county is situated in the northern part of the State, about equidistant from the Mississippi and Missouri Rivers and the Iowa State line, and has an area of 830 square miles. This county was first settled in 1832 by James Cawhon, Thomas Williams, James Low, and William Huckaby. In 1860 it contained a population of 14,375.

Physical Features.—The surface of this county is undulating, and in many places what is termed "broken." There are some singularly formed knobs, thus described in the Preliminary Survey Report of the Hannibal and St. Joseph Railroad Company:—

"The peculiar features of this section consist of short conical ridges formed by irregular ravines, several of which head in a point common to each, and, after running in opposite directions, curve abruptly and unite, thus forming what is generally termed the 'Knobs,' some of which are so regular in contour that they resemble more the works of art than those of nature. The summit of the Knobs seems to have been *a common level*, in some instances 200 feet above the general surface. A tendency to this conformation is first observed in township 60, and extends down into township 56; but they are seen in all their prominent characteristics in townships 58 and 59. They are drained by the Muscle Fork. The causes operating in producing these distinctive features must have acted differently upon the surface on either side of this particular locality; for while the 'Knobs' exhibit the effect of the action of subsiding waters, the former indicate that of a violent current, producing extensive, well-defined valleys and ravines. Indeed the whole surface, from 'Elk Knobs' west to Grand River, seems to have undergone the process of what is termed by

geologists denudation, by which all the superior, and a portion of the inferior strata have been carried off. The effect of this denudation has been to expose and render available an immense bed of bituminous coal, with which a greater portion of the country is underlaid; it extends a distance of 70 miles, probably terminating in the dividing ridge a few miles east of Bloomington."

From *the base* of the delta, between the junction of the Mississippi and Missouri Rivers, rises a table-land or water-shed, narrow at first, but gradually widening out until it loses itself in the rich table-lands of Minnesota. The "land of Hiawatha" gathers a large amount of its marvelous and far-famed beauty from the same great "water-shed" that constitutes much of the agricultural wealth of Macon County.

Geology, Minerals, etc.—This county, or a great portion of it, is underlaid by a stratum of bituminous coal, which is exposed in the banks of eight different streams along the line of the Hannibal and St. Joseph Railroad, (going West from Bloomington,) namely, Middle Fork, Chariton River, Muscle Creek, Little Yellow Creek, Yellow Creek, Locust Creek, Medicine Creek, and Grand River. This bed of coal varies in thickness from one to nine feet, the maximum occurring near Bloomington, the county-seat. On Grand River it appears at a depression of ninety feet *below* the Missouri River at St. Joseph, (as shown by the Hannibal and St. Joseph Railroad Surveys;) in the valley of Locust Creek, at a depression of seventy feet; in the Muscle Fork, at a depression of thirty feet; and on the Middle Fork of the Chariton, near Bloomington, at an elevation of five feet *above* the Missouri River at St. Joseph, showing a uniform rise to the northeast of about one foot per mile. Galena or lead ore has been found in the vicinity of Grand River, but no thorough investigations ever made as to its extent. Crude copperas (sulphate of iron) is found on one of the tributaries of Muscle Fork, and hydraulic limestone in several localities.

Rivers and Streams.—The principal streams traversing this county are the Chariton River and its tributaries. The county is very well watered.

Soil and Productions.—This county seems to possess most of the elements of native wealth and prosperity. It embraces a variety of soil, which produces abundantly all kinds of grain, grass, fruit, and vegetables grown in this latitude, and is well adapted to stock growing. For instance, the following figures have been furnished as a yield of one farm in the county: wheat, 25 bushels to the acre; corn, 100 bushels; oats, 40 bushels; potatoes, 150 bushels; onions, 200 bushels; beets, 200 bushels; carrots, 200 bushels; turnips, 350

bushels; timothy, 2 tons; clover, 2 tons; Hungarian grass, 2 tons; apples and peaches a good yield.

Internal Improvements.—This is the only county in the State traversed by both the North Missouri and the Hannibal and St. Joseph Railroads. The latter is completed, and running between Hannibal and St. Joseph, and doing a heavier business than any other railroad west of the Mississippi. The North Missouri connects with the Hannibal and St. Joseph at Hudson, where it will cross, and is now under contract to the Iowa State line, then to connect with other roads extending north into Minnesota. The Keokuk and Kansas City Railroad is projected to pass through this county.

Education.—McGee College, at College Mound, a post village, 9 miles south of Bevier station, Hannibal and St. Joseph Railroad, and 5 miles west from Jacksonville on the North Missouri Railroad, was incorporated February 23, 1853, is under the auspices of the Cumberland Presbyterians, with J. Dysart, President of Board of Trustees. Macon High School was incorporated November 21, 1857; and an academy in Bloomington, all in a prosperous condition, well patronized, and each conducted by an able corps of teachers. There are 85 free schools in the county, and 5019 pupils.

Religious Denominations.—Of churches in this county, there are 20, but we have the particulars of only 11, as follows: Methodist, 4; Baptist, 5; Presbyterian O. S., 1, and N. S., 1. We understand a Presbyterian or Congregational minister, who wishes to build up a school and church, would receive encouragement at Hunnewell, in this county, on the Hannibal and St. Joseph Railroad, a new town of considerable promise, in a good agricultural country, which is well settled by intelligent people.

BLOOMINGTON, the seat of justice, is situated near the center of the county, on the middle fork of the Chariton River, 3 miles from Bevier station, on the Hannibal and St. Joseph Railroad, is the business center for a very fertile and well-settled country; has good society, 2 newspapers, a good representation of business houses, and about 1000 population. Incorporated November 21, 1857.

Macon City and **Hudson** were separate and distinct towns until November 28, 1859, when, by a vote of the citizens of the two towns, the two were united in one under the name of Macon City. This place is very pleasantly situated at the crossing of the Hannibal and St. Joseph and the North Missouri Railroads, contains Presbyterian, Christian, and Methodist organizations, a Masonic Lodge, newspaper office, 3 schools, 4 hotels, (of which the Harris House is the principal railroad house,) a full representation of energetic business men, and 1500 inhabitants.

There are several new towns in the county, which are all growing so rapidly we hardly dare estimate their population, among which are **Carbon**, population about 100; **Bevier**, 75; **Calleo**, 100; **New Boston**, 200; **La Plata**, 200; **Newbury**, 75; **Vienna**, 100; **La Porte**, 75; **College Mound**, 175; **Centreville**, 75; **McCleansville**, 75; **Hunnewell**, 100.

The following was the number of business houses in November, 1859: newspapers, 2; bank, 1; lawyers, 17; physicians, 20; merchants, 35; grocers, 20; druggists, 5; silversmiths, 2; tinners, 2; blacksmiths, 40; wagon-makers, 4; saddlers, 3; tailors, 5; shoemakers, 5; cabinetmakers, 4; carpenters, 75; tobacco manufacturers, 4; nursery, 1; and hotels, 11. There are several saw and flouring mills in the county.

MADISON COUNTY.

This county is situated in the southeast part of the State, is bounded on the east by Bollinger, west by Iron, north by St. François, and south by Wayne County, and embraces an area of about 500 square miles. Population in 1860, 5794.

It was erected from the Counties of St. Genevieve and Cape Girardeau in 1818, but has since been much reduced in size by the organization of other counties.

History.—The first settlement made in this section of the country was at Mine La Motte, in 1722 or 1723. These mines, situated about 4 miles north from Fredericktown, were discovered in 1719 or 1720, by a Frenchman, whose name they bear. They were worked as early as 1765 or 1770, by the Indians and Spaniards; but we have been unable to find authentic data respecting their early history, as the records have been returned to Spain; this country at that time being under Spanish government. However, we find recorded in the American State papers, the claim of John Baptiste Francis Menard and Emily Josefa Renard, of the Empire of France, claiming two leagues of land at Mine La Motte, on account of settlement and improvement. They presented a certified copy of a grant from Boisbriant and Desursins, dated June 14, 1723. In consideration of the wealth of these mines, and to aid in their development and the colonization of the country, the Spanish government, in the year 1800, granted 5000 arpents of land to fifteen French families, "for settlement and cultivation." This grant laid between Saline Creek (which enters the

St. François a mile below) and another creek running parallel to Saline, one mile north. At that time the Osage and Kickapoo Indians were so numerous and troublesome, that these new-comers could not till the soil to any extent, and were obliged to concentrate, and live in close proximity, for mutual protection and safety. Hence they established the village of **St. Michael**, about the year 1800 or 1801, on the north bank of Saline Creek, directly opposite where Fredericktown has since been built up. In 1822 St. Michael contained 50 dwellings and several stores; now scarce a vestige remains to show the location of this once important center. For several years previous to 1817, an Indian family named Musco lived on the south bank of the creek where Fredericktown now stands.

Physical Features.—The general face of the country is very uneven, and in some portions approximates what may be termed "mountainous ridges." The higher hills are generally composed of immense masses of porphyritic stone, some of which contain more or less iron ore. A large portion of the county is not susceptible of cultivation, the surface generally being rocky and the soil thin. Some of the valleys produce well, and near Fredericktown there is a considerable body of fertile land.

Mineralogy.—There is probably not in the world, besides this, a section of country of the same area possessing a greater variety of minerals, and in greater quantities, than are found in Madison County. Gold, silver, lead, copper, iron, platina (?), nickel, cobalt, and manganese are known to exist; and all, except silver, (and possibly gold,) are found in quantities that pay a good profit for working them.

The **Mine La Motte Lead Mines** were until recently considered the most extensive in the State. Though other mines have been worked more systematically and regularly during the past ten years, these mines have been worked for more than a century, and by hundreds of men; yet new leads are frequently discovered, and the average annual shipment of 1,000,000 pounds of lead seems not to have decreased their mineral deposits perceptibly. The amount of mineral in these mines is inconceivably great, and the facilities for raising and smelting the ore very good. Fleming's furnace consists of 2 Scotch hearths, or blue mineral, and one dry-bone stack, or furnace. In the former they have smelted as high as 40 pigs of 70 pounds each in 8 hours, and can average 5000 pounds of fair mineral every 8 hours. The dry-bone furnace has turned out as high as 100 pigs of 70 pounds each in a tour, (12 hours.) The average is from 60 to 100, as to quality of the ore. The amount of lead shipped from Mine La Motte by the Messrs. Fleming during 6 years, ending in September,

1852, was 7,000,000 pounds—upwards of 1,000,000 pounds per annum. Joseph D. Villars, Esq., former agent of the proprietors, certified, in December, 1837, that the amount smelted annually for the four years preceding that time was 1,350,820 pounds, giving to the proprietors 103,582 pounds annually as rents; and that the number of hands engaged in the various operations, from the digging to the smelting of the mineral inclusive, would average about 150 persons annually for said 4 years. This shows the annual product of the labor of each operator to be 69,009 pounds.

It may not be generally known that the *nickel* used in the new cent was principally from these mines. The idea of introducing this metal into the lesser coin was suggested by Professor Booth, of the United States Mint, Philadelphia, who established works at Mine La Motte, in connection with a Mr. Coffin, for the separation of nickel from the other metals, and large quantities were shipped to the Mint for refinement and use. Much of the german-silver, or white ware used in forks, spoons, etc. is manufactured from nickel procured at these mines.

The **Mine La Motte Copper Mines** are some 4 miles due west from Fleming's smelting furnace. These deposits of copper were discovered in December, 1838, by H. N. Tong, Esq., now of Ironton, Missouri. But little systematic mining was done until the year 1845, when a practical miner named Marie, from England, purchased an interest in the mines, and a company was formed who erected a large smelting furnace, and worked the mines extensively. In three years, ending with 1848, the profits of these copper mines amounted to upwards of $150,000, exclusive of the outlay for machinery. Notwithstanding the immense profit received from working these mines, all work in them has for some years been abandoned, they being subject to the same influences that have so long prostrated all operations on the La Motte claim.

The **Mine La Motte property** comprises about 24,000 acres, and was confirmed by act of Congress, in 1827, to four French families, namely, the Vallès, Pratt, St. James, and Beauvis. On the 6th of November, 1837, this domain was sold by commissioners (William M. Newberry, Josiah Perryman, Theodore F. Tong, Caleb Cox, and Henry Janis) appointed by the Circuit Court of Madison County, "on petition for partition of lands and tenements." This property is now owned by the Messrs. Fleming,* who have some $300,000 invested.

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* We are specially indebted to Dr. R. F. Fleming for valuable contributions of minerals, embracing most varieties found in that locality.

The Buckeye Copper Mine is situated one mile south from Fredericktown, and is in the same belt of rock as those above described. This mine was discovered in 1846, and first worked by Pomeroy and Dille, who raised between 300 and 400 tons of ore (principally yellow sulphuret) in one year, by sinking a shaft 100 feet and drifting east 100 feet. The vein is nearly vertical, running east and west. This mine was abandoned in 1848, not on account of any decrease in the amount of ore found, but from the prodigality and inexperience of those who first worked it. A New York company, consisting of men of practical experience and abundant capital, have recently purchased this mine of Dr. Albert C. Koch, of St. Louis, and are preparing to work it upon a very extensive scale. Situated but one mile from the county-seat, and surrounded by a rich farming district, connected with the railroad at Pilot Knob by a good turnpike road, the location of the mine is considered as being very advantageous.

The **Carmack** and **Dillon Copper Mines** are situated in the next township south, and have been worked to sufficient extent to give evidence of their being immensely valuable. Marshall's copper mine is situated in township 33, range 7 east; was worked to some extent in 1836, and pronounced to be very rich, but nothing done with it for some years.

Gold and Platina.—Extensive deposits of these metals are said to have been found in this county, near Fredericktown, and the statements corroborated by some St. Louis assayers. The "gold ores" are found in a vein mixed with magnetic iron, rhodium, etc. Inasmuch as doubts exist in the minds of some practical geologists respecting the richness of these mines of gold, or the existence of platina here, we would refer the reader to the geological article of Professor Swallow, he being the highest authority on this subject, and to the following affidavit from Dr. Theodore Weiss, a practical chemist and a scientific man:—

I, Dr. Theodore Weiss, practical chemist, hereby certify, that I have examined carefully the deposits of syenit in Madison County, Missouri, which, to analyze, I was called upon by Dr. Albert Koch, and others; and having made more than fifty analyses, I found by each trial more or less gold, averaging four to five ounces per ton. The expenses for extracting this precious metal from the above mineral are $20 to $25 per ton. The deposits of this ore are almost inexhaustible, and may be estimated the least at 1,000,000 tons.

DR. THEODORE WEISS.

Sworn and subscribed to before me, the 25th day of June, 1860.

LIBERTY WAITE,
Justice of the Peace.

To men of capital and others this matter is worthy of attention.

Of Iron Ore there are immense deposits in several of the larger hills of this county, some of which promise fair to rival in riches and extent the famous Iron Mountain. Some of the larger and richest of these iron deposits are owned by Hiram N. Tong, Esq., of Ironton. No works have been established here as yet, but negotiations were being made to that end when this work was put to press, which will probably result in the erection of extensive iron and copper furnaces in the vicinity of these mines. Little or nothing has been done at these works for five years past, owing to some litigation as to title, instituted by heirs of the former owners, growing out of some informality in the court's proceedings in the case. Until this suit is settled, matters must remain in *status quo*, as neither the proprietors nor miners can feel much interest in mining upon a property which is in dispute. It is to be hoped that the questions will soon be settled, the agitation of which have so palsied every avenue of trade and every branch of mining operations, prostrated the prospects of hundreds of families, reduced the population from 500 to less than a score, rendering this once populous and thrifty business center comparatively a deserted waste. When work shall have been resumed upon the La Motte domain, employing thousands of hands, and when the iron, copper, nickel, gold (?), and platina (?) mines are being developed, as they one day must be, this will become the center of the wealthiest and most populous county (except St. Louis) in the whole State.

The greater portion of the older settlers at Fredericktown, and many of those who have located there more recently, are Catholics. About the year 1849, when their new brick church was completed, it was consecrated according to the usages of the Church. The officiating priest had employed a Frenchman to cut upon the capstone, over the door, a portion of the thirteenth verse of the twenty-first chapter of Matthew, as follows: "My house shall be called the house of prayer," and had carefully marked the words he wished to be copied, leaving out the remainder of the verse. A very large number of persons were in attendance, and after the bishop had concluded his portion of the dedicatory ceremony, the priest delivered a short sermon to the congregation, and quoting the portion of the verse, called the attention of the Church to it; when, looking up, he discovered, to his utter astonishment, that the stonecutter had copied the remainder of the verse, which, in connection with the above, read—"but ye have made it a den of thieves." The effect upon all present can be better imagined than described. The priest immediately ordered the superfluous portion of the verse to be "puttied up," as the stone still shows.

FREDERICKTOWN, the county-seat, is pleasantly situated, and surrounded by an excellent farming district; but large tracts of these lands have been held by descendants of the fifteen French families, who neither properly improve them, nor would they sell to others, which greatly retards the growth and prosperity of this community. This town was named in honor of Frederick Bollinger, a former member of the State Legislature. The land for the town site was donated by Nathaniel Cook, formerly from Kentucky. The principal edifices and business consist of 1 brick Catholic church, 1 brick Methodist E. church, 1 Christian Baptist church, 1 newspaper printing-office, 5 lawyers, 4 physicians, 5 stores, 2 liquor saloons, 1 cabinetmaker, 1 carpenter, 1 saddler, 2 blacksmiths, 2 wagon shops, 3 hotels, 1 jeweler, 1 tailor, and 1 real estate and land office agency. Population about 450.

The mail last year to this place averaged 6000 letters, and about 350 regular newspaper subscribers. Simon A. Guignon has been postmaster for a number of years.

Simmstown, one mile north from Mine La Motte post-office, is a German village, of probably 150 inhabitants, who appear to be frugal and industrious. They usually work in the mines when they are in operation, and till the soil when they are not mining.

MARIES COUNTY.

This county was formed from the north part of Pulaski and the southern portion of Osage Counties, by an act, approved March 2d, 1855, and had a population, in 1860, of 4946. Portions of this county have been settled for twenty-five or thirty years.

Physical Features.—The general surface of the county is broken timber land; however, very good soil is found in the valleys of Spring Creek, along the Maries, on the Dry Fork of the Bourbeuse, in Lane's prairie and the adjacent timber lands. Stock growing and fruit and grape culture could be profitably prosecuted in this county.

Minerals.—The State Geologist reports deposits of lead, iron, and copper ores, in various localities in this county; but little attention has been paid to mining. The *Central Missourian*, published at Vienna, dated October 29, 1859, says: "The lead mines recently opened by Wiley Williams, in the northwestern part of this county, bear favorable indications of being one of the richest deposits of lead

in the State; Mr. Williams took out 1300 pounds of pure lead ore, in two hours and a half, on Monday last. The copper mines, which eleven years ago were abandoned by Mr. John Crismon, having since been reopened by Dr. Latham, have already yielded a large amount of rough ore which when smelted yields a large per cent. of blister copper, and as the work goes deeper, the virgin copper appears in greater quantities, with unmistakable indications, apparently, of finding a rich lead of the pure ore. Tons, we are told, of this composition ore were thrown out which had been condemned as worthless by the miners, is now considered as being valuable for smelting. We are not sufficiently advised in mineral prospects to speak positive of the indications here, but basing our judgment upon the opinions of those who are best informed, we have no hesitation in expressing the belief that not only lead, but copper mining, in this county, will form no inconsiderable part of the future wealth of Maries County."

The particular location of the minerals already discovered are given in the Geological Report of the southwest branch of the Pacific Railroad, pages 34, 46, 62, and 72. The county is watered by the Gasconade River, Maries Creek, and their tributaries.

Churches and Schools.—There are church organizations of the Baptist, Episcopalian, Presbyterian, Christian, Methodist, and Roman Catholic denominations; but as yet no buildings have been erected for their meetings. There are 34 school districts, but about 12 schools taught in the county. The State appropriated $1223 37 for school purposes in 1859. An effort will soon be made for the erection of good school-houses and churches, and to secure the proper education of the youth of the county.

VIENNA, the county-seat, is agreeably situated, and is the only town of importance in the county; population 250. It has several stores, 2 groceries, 4 carpenters, 1 newspaper, 1 blacksmith, 1 wagon-maker, 1 hotel, 1 water-power flouring-mill, 1 steam saw-mill, 2 lawyers, and 3 doctors.

MARION COUNTY.

This county is situated in the east-northeast portion of the State, bounded on the east by the Mississippi River, west by Shelby County, north by Lewis, and south by Ralls and Monroe Counties, and contains an area of 432 square miles.

Marion County, in 1830, contained 4837 inhabitants; in 1836, 7612; in 1840, 9623; in 1850, 12,241; in 1856, 13,144; and in 1860, 16,700. The population and business of the towns, and the settlement of the county, have received a new impetus by the completion of the Hannibal and St. Joseph Railroad.

Physical Features.—There are few if any counties in the State possessing a more desirable division of prairie and timber, better soil and building materials, or that is better supplied with water.

The North and South Fabius, North and South Two Rivers, Troublesome, Grassy, Lick, and See's Creeks, with their numerous branches, afford an abundance of water to every township in the county. Besides these, there are bold springs of pure, clear water, in all parts of the county, and some sulphur and chalybeate springs. Probably two-thirds of the surface is undulating prairie; the woodland is in thin groves along the margins of streams, extending here and there out into the prairies, and embraces hickories, oaks, black walnut, sugar-tree, ash, sassafras, (some sassafras-trees are two feet in diameter, and used for rails,) hackberry, haws, elms, mulberry, honey locust, and papaw.

Minerals, Soils, etc.—Lead, zinc, and iron ores have been found in small quantities, but not sufficient to pay for working, or even to justify prospecting. Bituminous coal has been taken out of some banks in the southwestern and central parts of the county. Silicious marl, so valuable to the soil, is everywhere found, except on the alluvial bottoms. The State Geologist suggests that if the farmers will work their soils to a depth of twenty inches instead of five, as heretofore, "the increased profits in farming in this county alone would more than pay the annual expenses of the Geological Survey." Pipe-clay, of a pure white variety, is found in some localities, and is frequently used instead of lime for whitening walls, etc. Fire clay, gritstone, limestones, freestone, clay and sand for brick, and limestone for making hydraulic cement, are all abundant. The prairie soil is generally underlaid by a thick layer of silicious marl, which contains all the elements necessary to render it exceedingly fertile,

and adapted to most purposes of farming, either in wet or dry seasons. North and east from Palmyra are considerable bodies of land which sustain a heavy growth of American elms. The soil of these elm lands is, perhaps, second to none in the State in point of fertility. Marbles, suitable for building and ornamental purposes, are found in several localities in the county.

PALMYRA, the county-seat, is very pleasantly situated upon a commanding elevation between North and South Rivers, about one mile from each. The business houses are principally of brick, and the residences, churches, and educational institutions generally surrounded by extensive grounds, ornamented with shrubbery and shaded by forest trees. This is considered one of the most beautiful and pleasant places in the State. The principal educational institutions in the city are St. Paul's College, Bethel College, Baptist Male and Female Seminary, Presbyterian Female Institute, and the Presbyterian, Baptist, Methodist, Episcopal, and Reformers' churches. The schools are all in a flourishing condition, ably conducted and liberally patronized; the people intelligent and hospitable, and society very good. Palmyra is situated upon the Hannibal and St. Joseph Railroad, 14 miles from Hannibal, was incorporated as a city, November 23, 1855, contains a good representation of business houses, and a population of about 3000.

Hannibal, the eastern terminus of the Hannibal and St. Joseph Railroad, and the commercial point for an extensive region of country, is situated on the Mississippi River, 153 miles above St. Louis, 15 below Quincy, Illinois, and 288 miles west from Chicago. The town was laid out in 1819, incorporated as a town in 1839, and since then as a city. Its population in 1840 numbered 600; in 1850, 2557; and in 1860 was 6457. The city is neatly and compactly built, has an industrious and intelligent class of business men, and commercial facilities surpassed by no point in the State except St. Louis. Among the most elegant and substantial structures in the city may be named Brittingham's Hall, the Hannibal City Institute, and several fine churches. Of the latter, there are 3 Presbyterian, (O. S. and N. S.,) 2 Methodist Episcopal (North and South,) Baptist, Christian, Congregational, and Catholic churches. (For a complete list of offices, business men, etc., see page 102 of Sutherland & McEvoy's State Business Directory for 1860.) There are 2 excellent daily and weekly newspapers published in Hannibal, (see list in another chapter,) 2 banks, and 4 literary societies. When the Hannibal and Peoria Railroad (now in course of construction) is completed, this will be the terminus of three railroad lines: the Han-

nibal and St. Joseph Railroad, the Pike County Railroad, and the Hannibal and Peoria. This place is rapidly increasing in population and importance.

Marion City is situated twelve miles above Hannibal, and seven miles east from Palmyra. The town has an excellent steamboat landing, and is bordered on the west by a range of high bluffs, (some three miles distant,) while the land in the vicinity of the town is level and very fertile. This place was laid out in 1835, and in 1837 contained a population of 300. In 1859 the population was about 1000.

Philadelphia is situated fifteen miles west-northwest from Hannibal. It was first settled in 1830, by William Muldrow and others, and in 1836 was "the site of the department of arts and sciences of Marion College," which institution had been founded on the manual-labor plan, by Dr. David Nelson, William Muldrow, and Dr. David Clark. Improvements were erected previous to 1837, which cost upwards of $70,000, and Marion College then had seven teachers and 116 pupils, and was incorporated by the Legislature in 1831. There are in the town Baptist, Presbyterian, and Methodist churches, and a population of about 300.

McDONALD COUNTY.

This county is situated in the extreme southwestern corner of the State, bounded on the north by Newton County, on the east by Barry, on the south by Arkansas, and on the west by the Indian Territory, and contains an area of 648 square miles.

History.—The first settlements made here were in 1830, by Augustus J. Friend, P. Williams, R. Landerdale, Tiner, Mathews, Blevens, and Holcomb, whose families at that time numbered about forty souls. The county-seat was formerly at Rutledge, but is now at Pineville, which was once called Marysville, under which name it was first settled and located by J. B. King. In 1850 the population of the county was 2236; in 1856 it had increased to 3533; and in 1860, to 4061.

Physical Features.—The surface of the county is broken, and much of the upland sterile and unproductive for some crops, but good for fruit. The valleys are fertile, and well adapted to farming or stock-growing purposes. The county is drained by Elk River, a tributary of the Arkansas, and by its tributaries, severally named Buffalo, Pat-

terson's, Indian, Sugar, North Sugar, Battle, and Honey Creeks. Most of these streams are rapid, and afford excellent water power for mills or manufactories, which, when erected, would prove of great advantage to the community, and profitable to the proprietors. The timber consists of oak, walnut, pine, cedar, wild cherry, etc. Probably four-fifths of the county is timber land.

The **Soil** in the valleys and along the river bottoms is fertile, while on the uplands it is thin and gravelly—finely adapted to the culture of the grape. The productions are wheat, corn, oats, barley, tobacco, and the ordinary root crops. Wheat produces 25 bushels per acre; corn, 65 bushels; potatoes, 150 bushels; onions, 150 bushels; turnips, 200 bushels; tobacco 1000 pounds per acre. The principal fruits are apples, pears, peaches, and cherries. Farmers and stock growers with capital, and capitalists to improve the excellent water power, are much needed. A heavy trade is done here with the Seneca, Cherokee, and Creek Indians, which generally makes a good market for all kinds of goods and produce. A good portion of the year the Elk River is navigable, by which produce is flat-boated down into the Arkansas to Fort Gibson and Van Buren, Arkansas, and after disposing of the produce or goods, the boats are eagerly sought for by the Indians, who buy them at good prices.

Churches and Schools.—There are 15 churches in the county—5 Methodist Episcopal, 5 Baptist, and 2 New School Presbyterian, Christian, and Campbellite Presbyterian. Of public schools there are 33 in the county, having 1693 pupils, and 6795 acres of school land unsold.

Natural Advantages.—This county possesses an abundance of good water power, plenty of timber, and building stone, and is believed to have extensive mineral deposits in its northern townships. Manufacturers, stock growers or horticulturists will find good opportunities for investment and business here. The southwest branch of the Pacific Railroad, when completed, will pass through the adjoining county of Newton.

PINEVILLE, the present seat of justice, is built on Elk River, 6 miles from Rutledge, the former county-seat, 17 miles from Enterprise, 15 from Looniesville, 12 from Bethpage, 10 from Erie, and 100 from Van Buren, Arkansas. Pineville contains an academy, Masonic Lodge, 4 churches—Methodist, Protestant Methodist, C. Presbyterian, and Mis. Baptist—a flouring and 4 saw mills, several manufactories and stores, and about 400 population. A commodious brick court-house, and several new business houses are in course of erection. This brisk new town is the residence of Hon. John S. Phelps, M. C.,

Hon. J. C. Gullett, State Senator, and Hon. Wm. C. Duval, State Representative.

Enterprise, 20 miles southwest from Pineville, was laid out in 1835, by Rev. A. D. Smith, Rev. D. B. Cumming, and Hon. A. Holcomb, and now contains a church, public school, saw-mill, several stores and mechanics' shops, and about 100 population.

Elk Mills is 18 miles from Pineville, and 24 from Neosho. Population 75.

White Rock Prairie, 7 miles from the county-seat, is the center for a fertile section of country, contains a number of business houses, and a population of about 100.

Each of the towns above named is well supplied with business houses, but the county is settling rapidly, and there will soon be good openings for all kinds of mechanics and tradesmen.

MERCER COUNTY.

This county is situated on the Iowa State line, about midway between the two great rivers that wash either shore of the northern part of the State, and is bounded on the east by Dodge and Sullivan, south by Grundy, and on the west by Harrison.

The first settlements were made in 1837, by Allen M. England and Thomas Witten. The county has an area of 500 square miles; had 5603 inhabitants in 1856; and 9310 in 1860.

Physical Features.—The surface of the country is level and undulating, the soil generally fertile, with about an equal division of prairie and timber, which consists of white oak, bur oak, walnut, hard maple, white maple, linden, etc. It is drained by Weldon River, crooked fork of Grand River, Medicine and Muddy Creeks.

Soil and Productions.—The soil is generally fertile, and produces an abundant yield of most kinds of agricultural products, to wit: of hemp, 1000 pounds to the acre; tobacco, 1000; flax, 300 pounds; corn, 100 bushels; wheat, 33 bushels; rye, 40; oats, 50; buckwheat, 40; while the yield of vegetables will compare favorably with almost any section. Of Hungarian grass, as high as 7 tons, and of timothy, 5 tons, are said to have been cut per acre. These farm statistics are somewhat above the average yield. Good unimproved land is worth from $3 to $7 per acre; and improved, from $10 to $15.

Natural Advantages.—This county has an abundance of excellent

timber and building stone, very fertile soils, abundance of water, healthy climate, and good demand for all kinds of produce.

Minerals.—Coal and iron ore have recently been discovered by Mr. Williams, an old miner, and it is thought both these valuable minerals will be found in extensive beds. A large deposit of copper is said to have been discovered near Ravenna. Farmers and mechanics will do well to examine this county.

Churches and Schools.—There are in Princeton 1 Methodist church, 40 members; Baptist, 60 members; and the Christian church, 50. There are 65 district schools in the county.

PRINCETON, the county-seat, is a thrifty town of 500 inhabitants, with a good newspaper, "Princeton Reporter," Jas. A. Scarbaugh, Editor; also a good representation of business houses. It was first settled by John R. Davis, and incorporated March 4, 1855.

Ravenna has 200 population; **Middleburgh**, 100; **Somerset**, 50; **Madisonville**, 50.

MILLER COUNTY.

This county is situated in the south central part of the State, bounded on the north by Cole and Moniteau, on the south by Pulaski and Camden, on the east by Osage and Maries, and on the west by Morgan and Camden Counties. This county contains an area of 570 square miles, was first settled in 1830, before the county was formed, and was named in honor of John Miller, former Governor of Missouri. The population of the county in 1840 was 2232; in 1850, 3834; in 1856, 4024; and in 1860, 6316.

Physical Features, etc.—The surface of the county is generally broken timber land, and the land is thin and sterile except along the valleys of the streams. The county is intersected by Osage River, which is navigable from four to six months of the year. Some good mill sites are found on Tavern and Auglaize Creeks, and there is an abundance of excellent walnut, and sugar maple, and oak for lumber. The principal crops are wheat, corn, and oats. The soil and climate are well adapted to fruit culture, and also to stock growing. The yield of tobacco is above the average; corn, 65 bushels to the acre; wheat, 25. The common varieties of fruit are abundant. This county is well adapted to stock raising. Grazing lands occupy a fair proportion of the county. Timothy yields $2\frac{1}{2}$ tons, Hungarian grass, 3 tons, oats, 35 bushels to the acre.

History.—Miller County was first settled in 1815, by Seneca R. Y. Day and others. Present population of the county 4000.

There is no newspaper in the county, and no bankers; one lawyer, and no doctor; 2 merchants, 1 grocer, 1 druggist, 2 blacksmiths, no wagon-makers, 1 steam flouring-mill, 1 hotel. The principal denominations represented are Methodists and Baptists. There are no private schools; the public are the only schools.

Natural Advantages.—This county being situated near the Missouri River, and the Osage passing quite through it with its various resources of minerals, both lead and iron, together with its land and water privileges along the rivers and creeks, offers to the capitalists rare opportunities for investment. Land unimproved can be bought at from $2 to $6 per acre; improved, from $5 to $12.

TUSCUMBIA, the county-seat, and only town of importance in the county, is on the Osage River, 35 miles from Jefferson City, and 150 miles from St. Louis. The first settlements here were made in 1833, and a post-office was established four years afterward. The town contains one Lodge each of Masons and Odd Fellows, 1 saw and grist mill, 2 stores, 2 blacksmiths, 4 shoemakers, 1 wagon shop, 1 tailor shop, and 1 cooper, cabinetmaker, druggist, surveyor, tinner, hotel, 2 school teachers, etc. Population about 200.

The remaining towns of note are **Mount Pleasant, Iberia, Spring Garden,** and **Rocky Mount.**

MISSISSIPPI COUNTY.

This county is situated in the southeast corner of the State, is bordered on the north, east, and south by the Mississippi River, which divides it from Illinois and Kentucky. The county contains about 256,000 acres of land, most of which is susceptible of cultivation, and is a rich, alluvial soil, called, in Western parlance, "river bottoms," a soil every way as productive as the delta of ancient Egypt. Owing to the peninsular shape of the county, being nearly surrounded by the river, and the fact that a large water-course (James Bayou) runs through its center almost the entire length, having as much fall in twenty-one miles as the river has in seventy-five, it is susceptible of being drained at a trifling expense. Probably there is not, in all Southeast Missouri, an equal amount of land that can be

drained and made arable with so little labor. To protect the country from overflow the county built some thirty miles of levee at an expense of near $100,000.

The census taken in 1856 shows a white population of 3390, a slave population of 914, making a total of 4304; in 1860 it contained 4708 inhabitants; this is exclusive of the employees of the Cairo and Fulton Railroad, which number several hundreds.

Products.—The staple crop of the county is corn, yielding from 40 to 100 bushels per acre. Wheat does very well in the prairies, the timber lands being yet too new. Hemp and tobacco have been cultivated only to a limited extent, the objection being that they grow too large. Oats do well, and the coarser grasses, such as timothy, grow very luxuriantly, producing three and four tons to the acre. Garden vegetables attain a size that would be deemed fabulous in the hills, or under a more northern clime. Apples are very fine, but as yet there are few orchards, an evil that a few years will remedy. Peaches are abundant, but little care is taken in selecting the best varieties. The pecan is plentiful, and yields abundantly. Millet grows very large; and the new Hungarian grass is admirably adapted to this county. Should that new potato, the "*discorea*," prove successful, this is just the place for it, as the loose, rich, sandy soil will permit it to grow as big as a barrel if it chooses, and will admit of its going toward China, *ad infinitum*.

Internal Improvements.—The Cairo and Fulton Railroad runs through the northern portion of the county; the line is nearly direct, deflecting a little to the south to pass through Charleston. The distance through the county is about twenty-one miles, and nearly a "dead level," requiring very little embankment, and not crossing a stream or slough of any importance. The company, under the control of Mason Brayman, President, Sylvester Sexton, Superintendent of Construction, and J. H. Crocker, Chief Engineer, are pushing the work as fast as practicable.

The total stock subscription of this road is $1,261,775; the total number of acres granted by counties, 570,507, which, at $2 50 per acre, would bring $1,426,272 50.

The prospects of this company are represented as being very fair, and its means ample to secure the completion of the road. This road was opened to Charleston, twelve miles from the Mississippi River, in July, 1859, and is being rapidly constructed.

This county has a heavy indebtedness to liquidate, and a long levee to keep in repair, but there is no better land in the State than is

found here, nor any county in the State enjoying better market facilities, (except, perhaps, St. Louis,) as the very farthest point in the county from river or railroad is but twelve miles. All kinds of grain, grasses, and fruit that flourish in this latitude yield enormous crops here. The editor of the *Courier* has samples of timothy, whole fields of which grow six feet high, and millet full eight feet in height. The prospects are fair for a rapid advance of this county, in the point of commercial and agricultural wealth and importance; especially so when we look forward to the improvement of the immense beds of bog iron ore which are found in various parts of the county, and which are rich enough to be worked to advantage where fuel is cheap and limestone available, which is the case here.

To whom belongs the honor of making the first settlement in this county, we have been unable to ascertain; but learn that Abraham Hunter is considered the pioneer of the country, and, therefore, the first locomotive introduced upon the Cairo and Fulton Railroad bears his name. This road was opened on the 4th of July, 1859, and the old gentleman, who had resided in this county fifty-five years, beheld a locomotive for the first time in his life, and that locomotive bore the name of "ABRAHAM HUNTER." This was the happiest day of the old man's life. He greeted the arrival of the iron horse in a short and appropriate speech, and closed with the sentiment, "May this iron horse yet survive to quench his thirst from the waters of the Pacific Ocean." We see by the American State papers that John Johnson settled at Bird's Point, opposite Cairo, on the 26th of August, 1800, by virtue of a grant from Henrie Peyroux, Commandant, under the Spanish government.

CHARLESTON, the county-seat, was incorporated February 21, 1857, and is situated on Matthew's Prairie, and surrounded by extensive tracts of fertile land under a good state of cultivation. The principal county buildings are of brick, and the M. E. Church is said to be the finest in the State, south of St. Louis, Rev. T. W. Mitchell, Pastor. The Baptists have also a very neat church, W. K. Young, Pastor. Charleston contains 2 hotels, a printing-office, branch of the Union Bank, large and commodious school-house, six merchants and grocers, drug store, stove and hardware store, livery stable, 2 blacksmiths, 2 wagon-makers, 1 painter, 1 tinner, 2 shoemakers, 3 saddlers, 8 carpenters, 2 shoe shops, 1 tailor, 8 lawyers, and 7 physicians. The Free Masons, Odd Fellows, and Good Templars have each an organization here, and a fine hall. The *Courier*, edited by Geo. Whitcomb, is one of the best county papers in Southeast Mis-

souri, from which we have gathered considerable information respecting this fertile county.

There is a weeping willow growing in the yard of Mr. James Moore, of Charleston, that measures over twelve feet in circumference, three feet from the ground. Its branches extend longitudinally a distance of thirty-five to forty-five feet from the trunk, in every direction, making a most grateful shade, and giving a commanding and beautiful appearance. This tree is the product of a riding switch placed in the ground twenty-five years ago, by a person who plucked the twig at Cape Girardeau.

Bird's Point is directly opposite Cairo, and is the eastern terminus of the Cairo and Fulton Railroad, and owing to the rock point here projecting into the Mississippi, this is considered one of the most permanent landings on the river. This site has belonged to the Bird family ever since the territory was ceded to the United States. A town is about being laid off and built here. The first settlement here was in 1800, by John Johnson.

Ohio City was laid off in 1846 by Colonel Hiram Pearsons, and is situated about a mile above Bird's Point, and is old enough to be a town of larger dimensions and more importance than it is, but the completion of the railroad through it has given this town a new impetus.

Rodney Landing, two miles above Ohio City, is a shipping point for an extensive district of country, and will ever continue so, having a more extensive levee than Bird's Point.

Belmont, named after the American partner of the Rothschilds, is opposite the depot of the Mobile and Ohio Railroad, at Columbus. This place was selected as the probable terminus of the Iron Mountain Railroad, by the engineer, J. H. Morley, and so appears on the map and report of that company to the Legislature in 1853; and, also, as the terminus of a branch of the Cairo and Fulton Railroad, to connect it with the Mobile and Ohio Road. The State road through the Counties of Cape Girardeau, Scott, and Mississippi terminates at this point, it being the best crossing place on the river between Cairo and the Balize—long and familiarly known as the "Iron Banks Ferry." The town belongs to the Belmont company under the act of incorporation. Much of the stock is owned in Frankfort and Louisville, Ky., St. Louis, and the City of New York.

Wolf Island lies immediately below Belmont, and is a fine farming district, and its lands sell higher than other portions of the county. It has two stores, a fine seminary, a Lodge of Free Masons, and is

one of the best settlements in the county, the people generally being from "the first families" of Virginia and Kentucky.

St. James is a new town laid out on the Mississippi River, at the mouth of James Bayou. There are two steam saw-mills at the place, both doing a fine business, being as yet unable to supply the demand for lumber for shipment. In addition, there is another saw-mill about three miles above the bayou, making three saw-mills whose depot is St. James. Upon the banks of James Bayou and its tributary—the Black Bayou—there are large brakes or groves of the finest cypress timber in the world; also, in the surrounding country there is plenty of walnut, gum, oak, and other timber. The town is situated at the main and only good shipping point on the river, for a large portion of this county and the northeastern part of New Madrid.

Arrangements have been made to lay off a new town at the Big Spring on Sandy Ridge, near the old Spanish survey. This spring is somewhat noted as being a resort of the Indians in olden times, the ridge around it being high and dry, affording a fine camping ground; and, afterward, was selected by Wm. Zane, Esq., under the Spanish Government, as the best point for a station half way between New Madrid and the mouth of the Ohio. There is abundance of the best of cypress, oak, walnut, gum, cherry, locust, and other valuable timber in the county, and we see no reason why this should not be one of the greatest lumber depots in the West. A flouring-mill is much needed at Charleston, as a large amount of wheat is raised annually in Matthew's Prairie and the surrounding country.

MONITEAU COUNTY.

This is probably the most central county in the State, and is bounded on the east by Cole County and the Missouri River, on the south by Cole, Miller, and Morgan Counties, and on the north by Cooper County and the Missouri River. It embraces a superficial area of about 400 square miles, and had a population in 1860 of 10,947, including 745 slaves.

Physical Features.—This county presents every variety of surface, from the low alluvial bottoms of the Missouri to the high prairie lands of the south and west, which rise to an altitude varying from 350 to 500 feet above the Missouri River. The general features of

the county may be characterized as broken or hilly, with about an equal division of prairie and timber. There are extensive districts, however, possessing excellent soil with a surface sufficiently undulating to secure good drainage.

Soils.—The richest and deepest soil is found in the alluvial bottoms of the Missouri River, in the northeast portion of the county, and in the valleys of the Moniteau, Moreau, and their tributaries. "The largest bodies of arable lands are found in township 45, ranges 15, 16, and 17; and in township 44, ranges 16 and 17, which contain much beautiful prairie; township 43, range 15, and that portion of range 16 in this county, contains much elevated undulating prairie land of fair quality, but not equal to that farther northwest." The other townships are more broken, but in the small valleys and along the gentler slopes good farming land is found which is susceptible of profitable cultivation. In the valleys and along many of the streams good springs are found, but they are seldom met with in the elevated localities. There is an abundance of timber—in the valleys it consists of oak, elm, hickory, ash, walnut, maple, hackberry, buttonwood, and poplar, etc., while in the higher lands there is little else than the several varieties of oak and hickory.

A great many "sink holes" are found in the northern and western portions of the county, generally near the bluffs along the streams, which terminate in fissures or caverns in the rock beneath. These singular depressions or holes have the form of a broad inverted cone; or, as an old hunter described them, "like large bowls with the bottoms knocked out." Near the Missouri bluffs south of Mount Vernon they are quite numerous, and have been mistaken by many persons for ancient mines or old mineral shafts.

Farm Products.—In the northern portion of the county a considerable amount of tobacco is raised, which, with wheat, corn, and grapes, are the principal products of the soil. Some of the best yields are as follows: corn, 75 bushels to the acre; wheat, 40; rye, 40; barley, 50; oats, 65; buckwheat, 50; hemp, 1500 pounds; tobacco, 1200 pounds; potatoes, 250 bushels; carrots and turnips, 500 each; beets, 200; onions, 500; Hungarian grass, 4 tons; timothy, 3 tons; clover, 2 tons per acre. Cultivated farms are worth from $10 to $40 per acre; uncultivated land, from $5 to $15 per acre.

Stone Coal.—This mineral is found in sufficient quantities to supply the wants of the inhabitants for many years. Rich beds of both bituminous and cannel coal are found in the county, and heavy veins of the former are opened about three miles north of California, the county-seat; and in the vicinity of High Point, about twelve miles

south, rich deposits of the latter have been discovered. Some of the best banks are located as follows: about three miles northwest from Jamestown, in section 1, township 46, range 15, near a small branch of Howard Creek; also, near the head of Upper Brush Creek, in section 6, township 46, range 15—this vein is about nine feet in thickness, and upwards of 30,000 bushels have been taken out of this bank; another bed is situated in section 26, township 45, range 17, in the Willow Fork of the Moreau; also, in section 24, township 44, range 15, on one of the small tributaries of the Moreau a large bed of cannel coal is found.

Lead Ore.—Lead has been discovered at numerous localities in all those portions of the county where magnesian limestone forms the surface rock. Several openings have been made and considerable quantities of lead taken out in section 25, township 46, range 15; also, in section 5, township 45, range 14; and in section 17, township 45, range 14. From the last-named locality as high as 10,000 pounds of mineral have been taken out in one day by four men. "Perhaps the most valuable discovery of lead yet made in this county is what is known as 'High Point Lead Mine.' This mine was first opened in 1841, and worked without much capital or skill until about 1845, at which time operations were suspended. During the period this mine was worked, upwards of two millions of pounds of lead were raised and smelted." It has since been purchased by another company, and is now being successfully and profitably worked. Building stone, limestone, mill-stones, clays for brick, etc., are found in this county in abundance. For full particulars in regard to the geology of this county we refer the reader to the able report of Professor Meek, in the State Geological Survey.

Churches and Schools.—There are in this county twenty-five church organizations, embracing Methodists, Baptists, Presbyterians, Christians, Catholics, etc. There are forty-two free school-houses in the county, in which over 2000 children are taught. The amount raised to build and repair school-houses in 1857, $2420 41; amount apportioned to the county by the State for 1859 was $2546 79. There is a seminary at California, also an excellent male and female academy at Tipton, both in a flourishing condition and well supported.

CALIFORNIA, the county-seat, is situated on the Pacific Railroad, twenty-five miles from Jefferson City, and contains a population of 900. There are in the town 8 merchants, 5 lawyers, 4 physicians, a large steam flouring-mill, tobacco manufactory, a weekly newspaper, (the California *News*,) with a circulation of 800 copies, 3 churches, a seminary, and a number of private schools.

Tipton is a flourishing town on the Pacific Railroad, twelve miles west of California, and has a population of 600. This is an extensive business point and is growing rapidly. It is surrounded by one of the richest farming regions in the county.

Mount Vernon and **Jamestown** are thriving towns in the northwestern part of the county.

MONROE COUNTY.

This county is situated in the east-northeastern part of the State, bounded on the east by Ralls, west by Randolph and Shelby, north by Shelby and Marion, and south by Audrain County, and contains an area of about 620 square miles. The population of Monroe County in 1840 was 9505; in 1850, 10,543; in 1856, 11,353; and in 1860, 14,933.

Physical Features.—About two-thirds of this county is timber land. The prairies are small and fertile. The largest body of prairie land in the county is an arm of Grand Prairie, in the southern part of the county, which is exceedingly fertile and well settled. The general character of the county is undulating, and the timber consists of oaks, hickories, ash, elm, hackberry, walnut, buckeye, sugar maple, sycamore, linn, and birch. The timber is well distributed throughout the county. The principal streams in the county are Salt River and its branches, Middle Fork, Elk Fork, South Fork, and Long Branch, and also Crooked, Indian, and Otter Creeks. Williams's Spring, at Paris, is one of considerable note. (See analysis of the water, page 238, Appendix Geological Report.)

Soil and Productions.—The soil is generally fertile and well adapted to all purposes of the farmer or stock grower. The higher rolling lands are well adapted to the growth of fine tobacco, which is one of the principal staples of the county. Corn is raised extensively. This has been a good stock-growing region since its first settlement, and as early as in 1836 (six years after it was organized) the farmers raised for sale horses, mules, horned cattle, sheep, and hogs; and in 1836 there were about 500 mules sold from this county.

History.—The portion of Ralls County now forming Monroe was first settled in 1820, 1821, by Daniel and Jacob Whittenburg, Tyra Harris, Pleasant Ford, Ezra Fox, Hugh and James Wills, John Gee, James and Matthew Mappin, and John C. Milligan, with their several families. The county was formed from Ralls in 1830, and organ-

ized in 1831, at which time it contained the families before named; and such was the increase of business and population, that the assessor's returns for 1836 estimated the amount of goods imported into the county that year to be upwards of $200,000 worth. In 1830 there were less than 300 voters, and in 1836 the number had increased to nearly 1500. Wetmore's Gazetteer, 1837, says: "On a stream called Sweet Lick there is a battle-field so thickly covered with the bones of combatants slain there, as to deserve a high place in the annals of bloodletting. The conflict was between the Sac and Fox Indians and the Sioux. Tradition does not particularize the battle, nor are we able to determine to which nation of these red warriors victory was awarded by the Great Spirit. The same powerful incentive, the love of glory, that strewed the field of Waterloo, governed the whirlwind of passion on this field of savage slaughter; and a like cause of war, the ambition of rival chiefs, governed in both instances."

The **Churches and Schools** are named in the towns in which they are located. There are 35 in the county: Christian, 7; Baptist, 8; Catholic, 2; Presbyterian, 10; M. E., 8. The school buildings are good, and the educational institutions, both select and public, liberally patronized, and generally under the control of competent and experienced teachers. This county has a school fund, arising in part from the sale of swamp lands, which we see by the Paris Mercury sold as high as $20 an acre, and that during the sale $28,000 worth were sold in one day. There are 58 school-houses in the county, and 3 academies. In 1858 there was $12,390 paid to the teachers of public schools, and only four counties in the State that expended more for the same purpose.

Minerals, Building Materials, etc.—There are good coal banks opened near Paris, and a good portion of the county is underlaid with coal of sufficient thickness to justify working. Limestone, freestone, and sandstone are abundant in various localities, and good clay for stoneware or for brick making.

Both farmers and mechanics are wanted in this county, and will find good openings for business. Steam mills are needed at several localities, and several good water-power sites are unimproved. At Paris (the center of a good agricultural region) a steam flouring and grist mill is much needed, and would prove a paying investment. Brick and stone masons are also wanted.

PARIS, the county-seat, is situated on the south bank of the Middle Fork of Salt River, very near the center of the county. Six years before the county was formed, this town was laid out by Messrs. James R. Abernathy, James C. Fox, and E. W. McBride; and in

1837 contained seven stores and a number of families. It was incorporated as a city November 19, 1855, and has now a population of 1000; with 5 churches—Presbyterian, Methodist, Christian, Baptist, and Calvinist—a Masonic and an Odd Fellows' Lodge, a branch bank, newspaper office, male and female seminary, and a good representation of business houses, mechanics, etc. This place was originally located in a forest of timber, and as it has improved, the forest has given way. The prairies, $2\frac{1}{2}$ miles distant, are thickly settled with industrious farmers. Population 1000.

Florida is situated on the south bank of Salt River, 12 miles due east from Paris, and 6 miles south from Monroe Station on the Hannibal and St. Joseph Railroad. This is one of the oldest towns in the county, settled about the same time as Paris, and in 1836 contained 4 stores. It now has 2 very fine water mills, and a thrifty, energetic population of 250.

Madison is 12 miles west from the county-seat, population 225, with churches, schools, and business houses in proportion.

Santa Fe is in the southeast township of the county, on the South Fork of Salt River, 12 miles from Paris, and about 13 miles from Mexico, on the North Missouri Railroad. It was first settled in 1830, in the timber, and now contains 3 churches—Baptist, Methodist, and Christian—1 woolen factory, distillery, and a good representation of business houses. Population 150.

Somerset and **Indian Creek** (or **Elizabethtown**) are villages of some promise.

MONTGOMERY COUNTY.

This county is situated in the eastern part of the State, bounded on the east by Warren and Lincoln, on the west by Callaway and Audrain, on the north by Audrain and Pike Counties, and on the south by Warren County and the Missouri River. Montgomery contains an area of 504 square miles.

History.—This county was erected from St. Charles, in 1818, and some of the most daring battles fought between the pioneers and the savages occurred upon territory now embraced within its limits. In 1840 the county contained 4371 inhabitants; in 1850, 5489; in 1856, 7263; and in 1860, 9011.

Physical Features.—The northern portion of the county is level prairie; the southern, broken timber land. There is considerable prairie in the northern and northeastern portion of the county. Can-

nel coal has been found in considerable quantities near Danville, and bituminous coal, near Wellsville, is very abundant. The county is drained by Loutre River, Oak and Hickory Creeks, and their tributaries. There are several fine springs in the county, good building stone, clay for brick, and indications of lead ore.

Soil and Productions —The soil is generally fertile, and adapted to the production of corn, oats, tobacco, barley, and fruit of various kinds. Improved lands are worth from $10 to $30 per acre; and unimproved, $5 to $15. Stock growing would be a very profitable and successful business. Having the Missouri River on the south, for shipment, and being traversed by railroad, the county possesses superior commercial facilities.

Industrial Pursuits.—There are in the county 1 newspaper, 8 lawyers, 17 physicians, 20 merchants, 6 grocers, no druggist, no silversmith, 2 tinners, 10 blacksmiths, 4 wagon-makers, 4 saddlers, 5 tailors, 6 shoemakers, no cabinetmaker, 2 carpenters, 1 tobacco manufactory, 6 steam and 2 water saw-mills, 3 steam and 1 water flouring-mills. The classes most needed are farmers, brickmakers, brick-masons, wagon-makers, tinners, and carpenters.

DANVILLE, the county-seat, pleasantly and advantageously situated in Loutre Prairie, was incorporated March 2, 1855, and has a population of 450. **Middletown**, 300; **High Hill**, 200; **Wellsville**, 150; **Montgomery City**, incorporated February 9, 1859, 250; **Florence**, 50. The four last named are on the North Missouri Railroad, which passes through the county. Distance from county-seat to Jefferson City, 50 miles; to St. Louis, by railroad, 84 miles.

MORGAN COUNTY.

This county is situated in the central part of the State, and is bounded on the north by Cooper, northeast by Moniteau, which separates it from the Missouri, on the east by Miller, on the south by Camden, and on the west by Benton and Pettis Counties; and had a population, in 1860, of 7624 whites, 650 slaves, and 18 free colored. It was first settled about 1819–20, and in 1850 contained 6005 inhabitants.

Physical Features.—The surface of the county is undulating, with about an equal division of prairie and timber. It is watered by the Osage River and its tributaries on the south, Gravois Creek in the east, and the head waters of the La Mine on the north. The prairies

and the valleys along the streams are very fertile, and produce large crops of all the fruits, grains, and grasses that grow in this latitude; while the ridges are well adapted to the grape culture, both in soil and climate.

Minerals.—Lead ore, bituminous and cannel coal, limestone, and freestone are found in various parts of the county. The coal is represented as being of the best quality.

The price of improved land in the county is from $7 to $30 per acre; unimproved, from $3 to $7. Farmers and mechanics of all kinds are needed here, and can do well.

The principal natural advantages of Morgan County are a healthy climate, fertile soil, good schools, an intelligent community, no county debt, cheap lands, and a good market for produce, and for building purposes good material. There are a number of steam and water power flouring and saw mills, carding machines, and distilleries in the county.

In Wetmore's Gazetteer, published in 1837, the author says: "There is a cave in this county, near the Gravois, which opens at the base of a hill, and extends through it a distance of two hundred yards; a person on horseback can ride through it with perfect convenience." This description of its location is very indefinite; but, never having seen it, we cannot speak from personal observation.

Churches and Schools.—There are 10 churches in the county, principally of the Methodist, Baptist, and Presbyterian denominations. Of schools there are 35, attended by about 2000 pupils, and supported by State aid and private subscription.

VERSAILLES, the county-seat, is situated near the center of the county, on the "divide" between the waters of the Osage and the La Mine Rivers, on a beautiful prairie, with an abundance of timber on the south, and fine farming land all around it. Population about 500. A large bed of cannel coal has been opened at Versailles, and about 1½ miles distant bituminous coal is found in large quantities. Ten miles from Versailles is a large spring, which affords sufficient water power to propel a grist and saw mill, and a carding machine.

The Osage Valley and Southern Kansas Railroad, projected to run from Tipton, on the Pacific Railroad, to the Kansas line in Bates County, passes through Versailles; and from Tipton to Versailles it is under contract and rapidly being made. Of business houses in Versailles, there are 3 hotels, 5 stores, 1 furniture store, 1 drug store, 2 saddlers, 1 shoe shop, 2 groceries, 2 blacksmiths; and several carpenters, cabinetmakers, physicians, lawyers, etc. Distant from St. Louis, 165 miles; Jefferson City, 40; Syracuse, 17; Tipton, 16; and Boonville, 40 miles.

Syracuse is pleasantly and advantageously situated on the Pacific Railroad, in the northern part of the county. This being the shipping point for a large section of country, the town has grown very rapidly, and now has a population of 600. There are many extensive business houses here, and a heavy trade carried on with Southwest Missouri and the surrounding country. The great overland mail for California leaves the Pacific Railroad at this point, and the Missouri Stage Company's first-class Concord coaches leave Syracuse daily for the North, South, and West. All the coaches leave the "Brayton House," including the overland mail, where their general office is kept. Milo June, Esq., is the agent for the company. Much credit is due to the energy of Thomas R. Brayton, Esq., and a few other enterprising men, whose energy and public spirit have done much toward the improvement of the town.

Tuckerville, in the southwestern corner of the county, on the Osage; **Mining Point,** in the southeastern, on the Osage, at the mouth of Gravois Creek; **Stone House,** in the eastern; **Minerva,** in the western; and **Wheatland,** in the northeastern portion of the county, are all places of some note and enterprise, and bid fair to become populous towns.

NEW MADRID COUNTY.

This county is situated near the southeastern extremity of the State, bounded on the northeast by Mississippi County, on the east by the Mississippi River, which separates it from Tennessee and Kentucky, on the west by Stoddard and Dunklin, north by Scott, and south by Pemiscot County. It contained, in 1840, 4554 inhabitants; in 1850, 4270; in 1856, 4317; and in 1860, 4759. The county-seat (same name) contained, in 1859, a population of about 900.

Physical Features.—This and adjoining counties embrace most of what is termed in the government surveys as "the Swamp Region." The general surface of the county is a level plain, watered by lakes and sluggish streams, and some portions are heavily timbered with oaks, ash, hickory, walnut, hackberry, boxwood, coffee-bean, black locust, black and sweet gum, and cypress.

The Soil is exceedingly fertile, and produces enormous yields of corn, wheat, oats, hemp, cotton, and all the root crops. Corn and stock are the staple products; and it is estimated that there is more

corn raised in this county, taking one year with another, than in any other county in the State, and that those engaged in farming here receive a better income from their labors than the same number anywhere else in Missouri.

History.—Settlements were made at New Madrid by a few Spanish families as early as 1780. About that date, an attempt was made by the Spanish Government to monopolize the navigation of the Mississippi River; and to carry out their plans, a revenue officer, with a strong, well-armed guard, and military post was established at New Madrid and other points below, (in 1786,) at which all boats from the Ohio River region were required to land, and comply with their revenue laws, which were rigorously enforced by military officers, even to the seizure and confiscation of the boats and cargo; and, in some instances, the owners and officers of them were fined, imprisoned, and sent penniless away. The settlements along the valley of the Ohio, and in the district then claimed by Georgia, had become populous and important, and the citizens regarded the duties levied upon their produce and goods as exorbitant, and claimed that they were unjustly and cruelly imposed upon, naturally having a right to the free navigation of the Mississippi. The Americans were as earnest in resisting these unjust exactions as the Spanish were in enforcing them; and to such an extent had this oppression been enforced, from 1785 to 1787, that the Western people became greatly incensed, and a general feeling of revenge pervaded the entire Ohio region, from the sources of the Monongahela to those of the Tennessee and Cumberland Rivers, and a military invasion of Louisiana was planned, as the only efficient means of securing to them their rights, and redressing the wrongs they had received. With a view of the impending conflict between the Spanish and Federal powers, and the disastrous consequences that must follow, Colonel James Wilkinson, an intelligent merchant and prominent citizen of Kentucky, went to New Orleans with several boats loaded with produce, in 1787, and represented to Governor Miro a true condition of affairs, stating at length what he considered the political interest of Spain to be, and of the Americans located upon the Western waters. The Governor was pleased with his suggestions; but alarmed by the statements of the impending danger of invasion, and requested Colonel Wilkinson to put his views and suggestions in writing, that they might be dispatched to the King of Spain. In this paper, of some twenty pages, he set forth the natural advantages and resources of the Northwest, the strength and uncompromising character of the people, and their determination to engage in a hostile invasion of Louisiana, and a seizure of the port of New

Orleans, provided the Federal Government failed to obtain from Spain, by negotiation, such commercial privileges in Louisiana as were indispensable to the prosperity of the Western people. Governor Miro transmitted this document to Spain, to be laid before the king, and the views and suggestions of Colonel Wilkinson were unhesitatingly adopted; and an entire change in the government and policy of Louisiana was the result. The rivers were at once thrown open to the free use of the Americans, and grants of lands and other privileges (heretofore granted only to the most favored nations) were offered to Americans from Kentucky and the Cumberland River, to induce them to emigrate to West Florida, and establish themselves under the protection of Spain. The formation of American settlements in Upper Louisiana, as well as in the Florida District of Lower Louisiana, was considered by the Governor as the most important step toward accomplishing a political union between the Western people and the Province of Louisiana. Accordingly, in 1788, a large American settlement was planned to be made on the west side of the Mississippi, between the mouth of the Ohio and the St. François Rivers. General Morgan, from New Jersey, received from the Spanish Government an extensive grant of land, "seventy miles below the mouth of the Ohio," upon the ancient alluvions, (which extend westward to Whitewater Creek,) upon the condition that he would there establish himself and an American colony. He soon arrived with his colony, and upon the beautiful rolling plains laid off the plot of a magnificent city, which, in honor of the Spanish capital, he called "**New Madrid.**" The extent and plan of the new city was but little if any inferior to the old capital, which it was to commemorate. Spacious streets, extensive public squares, avenues, and promenades were tastefully laid off to magnify and adorn the future city. In less than twelve months it had assumed the appearance of a regularly built town, with numerous temporary houses distributed over a high and beautiful undulating plain. In the center of the site, and about one mile from the Mississippi, was a pretty lake, to be inclosed by the future streets of the city.* The early French settlers state that the town originally extended forty acres in length along the river, and the back part was contracted to twenty acres, on account of some swamps; while its depth was sixteen acres. It contained ten streets running parallel to the river, and eighteen others crossing at right angles; the former sixty, and the latter forty feet wide. Six squares, of two acres each, were laid out and reserved for town parks, and a street one hun-

* Monette's Mississippi Valley.

dred and twenty feet wide reserved on the bank of the river. This scheme of colonization and its *objects* failed, and, after building a small number of houses, the inhabitants became very sickly, and no further progress was made in the settlement. Morgan, in consequence of some obstacles to his designs, created by the Spanish Government, abandoned his pursuits and left the country; and many who joined the colony returned to their former homes, while others removed farther westward; and but a few of the old settlers or their descendants remained at the time of the earthquakes, in 1811–12. Early historians have not spoken in very favorable terms of New Madrid and its location. Professor William Darby, in his Emigrants' Guide, in 1818, says: "New Madrid has received a celebrity that must astonish those who ever visited the place in open day. The ground upon which the town stands is something higher than the ordinary bank of the Mississippi, but is exposed to the ravages of that stream, to whose encroachments it has, in a great measure, yielded. The town is environed, both above and below, with stagnant, muddy creeks. When to these natural impediments were superadded the usual policy of the Spanish Government, no wonder need be excited at the little progress of this town from 1787, the epoch of its foundation, until 1803, when it was taken possession of by the United States. Since the latter period, the advance of this place has been retarded by the natural inconveniences of its local position."

Mr. Thomas Nuttall, in his "Travels in the Arkansas Territory," 1821, says: "New Madrid is an insignificant French hamlet, containing little more than twenty log houses and stores, miserably supplied, the goods of which are retailed at exorbitant prices."

New Madrid is now a handsome town, and surrounded by many neat and commodious suburban residences. The planters of this county are noted for their hospitality, refinement, and intelligence. Such have been the encroachments of the river at this point, we are informed, that where the original town was laid off is now one and a half miles *on the other side of the Mississippi, in Kentucky.* (See description of "Earthquakes of 1811–12," in Book II.)

Antiquities.—La Vaga, the historian of De Soto, states that when he visited New Madrid it bore unequivocal marks of having been an aboriginal station, still presenting the remains of mounds, which abounded with fragments of earthenware. One of these mounds, situated about four miles below New Madrid, was 1200 feet in circumference, and 40 feet in height, level upon the top, surrounded by a ditch several feet in depth. It is situated on the margin of a beautiful lake, (Brackenridge.) Numerous large grinders and mammoth bones have been found in the edges of swamps and ponds in this region.

NEWTON COUNTY.

This county is situated in the southwestern corner of the State, bounded on the north by Jasper, on the south by McDonald, which separates it from the Arkansas line, and on the west by Kansas State line. Population in 1860, 9488.

Physical Features.—The face of the country is generally undulating, with about an equal division of timber and prairie land. This county embraces some of the finest agricultural lands in Southern Missouri, both valley and upland. Of the latter, some of the most fertile are Oliver's Prairie, Pool's Prairie, and Sarcoxie Prairie. The valleys of nearly all the streams are rich and well timbered with oak, hickory, walnut, elm, hackberry, mulberry, and a great abundance of wild grape vines; those of Indian, Hickory, Shoal, and Buffalo Creeks have fine large timber in abundance. The three first named, together with Copp's Creek and Lost Creek, afford water power probably unsurpassed in the State.

Mineralogical Character.—In his report of the survey along the line of the southwest branch of the Pacific Railroad, which passes through the center of this county, Professor Swallow says: "Some years ago, I reported this one of the best lead regions in the world. All the subsequent developments have proved the accuracy of that estimate of the mineral treasures of Jasper and Newton Counties." The same writer says: "Mining at Granby has been most successful, as is evinced by the great number of miners and smelters and merchants who have there congregated in so short a time, and so far from the great thoroughfares of travel, and by their contentment and satisfaction with the result of their labors." In the fall of 1854 there was not a cabin on the site where Granby now stands, and only one shaft had been sunk below the surface. Now there is a town of 2500 inhabitants, and hundreds of shafts have been sunk, and are being worked to great profit. "The statistics of one shaft will give an idea of the quantity of ore raised and the profits of mining at this place. Mr. Frazier's shaft, as I am informed, yields 100,000 pounds of galena per month. In one week alone it yielded 50,000, which, at $20 per thousand, would amount to $1000; deduct $150 for expenses, and the profits of this shaft alone were $850 for that week; they average about $1400 per month."*

* "The Geological Report of the Country along the line of the southwest branch of the Pacific Railroad" gives the location of the most important lead

The Neosho *Herald* of September eighth states that the furnace of Blow & Kennett, at Granby, had lost but two days from the first of March to that date, and that an average of near 20,000 pounds of mineral per day had been smelted, which would net at the end of the year over 6,000,000 pounds smelted by that establishment. The same number of the *Herald* (an excellent paper, by the way) announces that eight new shafts are being sunk by enterprising parties, and that Blow & Kennett are erecting two "eyes" for smelting slag.

There are now in operation, in the county, three large steam furnaces, and others propelled by water and horse power. The amount of mineral smelted within the last year was about 10,000,000 pounds, which produced about 7,000,000 pounds of lead, which is taken by wagons to the Pacific Railroad, also to the mouth of Lynn Creek, on the Osage, for shipment to St. Louis.

We could give the statistics of yield from a number of the shafts, but will insert but one. The mines of Price, Bray & Company are among the best managed in that region. They have sunk fully a score of shafts, from one of which, only ten feet deep, 20,000 pounds of galena was taken.

Sulphuret of zinc has been found in a number of the mines of this county, but will probably not be worked to any extent until better facilities are offered for getting the products to market. (See chapter devoted to "Lead Mines of Southwestern Missouri," in Book II.)

Soil, Climate, and Productions.—The soil in this county is diversified in character, but generally fertile, and well adapted to the growth of all kinds of grain, fruit, and vegetables suitable to this latitude. Lead forms the principal staple of Newton County, yet the agricultural pursuits will prove very remunerative when a good market is secured for the produce.

The following yield has been realized, but it is rather above an average: wheat, 40 bushels; corn, 75; rye, 30; oats, 50; potatoes, 400; turnips, 700; timothy, 2 tons; Hungarian grass, 4 tons; hemp, 800 pounds; tobacco, 1000 pounds to the acre. Apples, pears, and cherries yield abundantly.

The soil is admirably adapted to grape culture. Native grapes are abundant and large, some of them measuring three-fourths of an inch in diameter. But very little attention has been paid to fruit or grape culture. Improved lands are worth from $7 to $12 per acre; unimproved, $4 00.

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mines and furnaces, also a minute description of the geology of the country traversed by said road. Copies can probably be procured from the Pacific Railroad Company, Chestnut Street, St. Louis.

Of the climate of Southern Missouri, the State Geologist says: "It is the most agreeable and salubrious; the summers are long, temperate, and dry; the winters short and mild. No climate, in short, is better fitted to secure health and a luxurious growth of the staple products of the temperate zone. The census report of 1850 shows this (Southern Missouri) to be one of the most healthy regions of the United States."

History.—Newton County was first settled by L. Oliver, in 1829, who was the only white man in the county. It was then a part of Crawford County, which at that time embraced territory that has since been divided into some thirty counties. At an early day this county was designated by the particular name of "Six Bulls," a name given it by hunters, from the fact that six water-courses run very near together, varying in length from twenty-five to seventy-five miles. These streams with their tributaries water the southwest corner of Missouri, are fed by never-failing springs, and are the same throughout the year. Those who settled here at an early day had no mills; but at nearly every door, as in all the pioneer settlements, stood a mortar, in which corn was made into meal or hominy, and groceries and "store goods" were brought from the river on horseback, over the long and tedious Indian trails. The old settlers of Southwest Missouri who live to see the locomotive rush past their doors, and who have fought to do away with the Indian's war-whoop, and labored to introduce the locomotive's shrill whistle instead, have much to be proud of, and deserve the respect and gratitude of every citizen. They have done for us what we can never do for them.

Industrial Pursuits.—There are in this county 1 newspaper, (the Neosho *Herald*,) 11 lawyers, 16 doctors, 23 merchants, 11 grocers, 3 druggists, 1 silversmith, 2 tinners, 15 blacksmiths, 4 wagon-makers, 1 saddler, 1 tailor, 2 shoemaker shops, 3 cabinetmakers, 10 carpenters, 6 saw-mills, (5 of which are by water power,) 5 water-power flouring-mills, and 2 hotels—the Neosho House and Union Hotel.

Inducements to Immigration.—No county offers greater inducements to intelligent farmers or stock growers. The southwest branch of the Pacific Railroad will soon open up this country, so long neglected, and afford a speedy transit to one of the best markets in the world. Besides, the rapid increase of the mining and manufacturing population demands a comparative increase in the number of producers. This county is well adapted to stock growing and to grape culture, as well as all other branches of agriculture. Manufacturers of all kinds are needed; woolen and cotton, boots and shoes, and agricultural implement manufactories could be erected in this county

to advantage, and would find all the raw materials and the water power at hand, as well as a good home market for all their wares. Carpenters, brickmakers, blacksmiths, coopers, millwrights, stonemasons, and shoemakers would find good openings. Grand Falls of Shoal Creek have a perpendicular fall of fourteen and a half feet, and sufficient water to run four or five pair of burrs, or other heavy machinery. James B. Scott has a merchant-mill upon it, with two runs of burrs; but it is only partially improved. These falls are seventeen miles from Neosho, in the northwest corner of the county.

Churches and Schools.—There is hardly a church edifice in the county deserving the name. The religious denominations in the county are Methodists, Baptists, Presbyterians, and Reformers, or Campbellites. Of school districts there are 44, but the number of school-houses we were unable to ascertain. Twenty-two district schools are reported as being supported by State and county fund. The amount apportioned to this county for 1859 was $2307 36. **Newton College,** situated on Oliver's Prairie, commenced its seventh session in September last, with very flattering prospects. The college edifice is a large two-story brick, and is the best arranged, the most commodious and comfortable school building in Southern Missouri. The community surrounding the college is distinguished for good wealth, morality, and industry. By a special act of the Legislature, spirituous liquors cannot be sold near the institution. The college is free from any particular denominational control. In respect to its educational position, it is intended that it shall stand in the very first rank. At a meeting (January 21, 1859) of the boards of trustees of the college and of the school district in which it was situated, it was

Resolved, That the trustees are determined that Newton College shall afford facilities for acquiring education second to no school in the Southwest; and that their best efforts shall be employed to make scholars of, and to cultivate habits of refinement and taste in those intrusted to their care.

E. H. Grabill, A.M., is president of the institution, at Newtonia, Newton County, to whom communications can be addressed.

A female academy has recently been established in Newton, which, though in its infancy, promises to become a permanent institution, and will add greatly to the culture and education of the daughters of the Southwest.

NEOSHO, the county-seat, is near the center of the county, 8 miles from Granby, and 175 from Syracuse, on the southwest branch of the Pacific Railroad. It is situated in the valley of Hickory Creek, 2 miles above its confluence with Shoal Creek, surrounded on the east

and west by gentle hills, covered with groves of oak and hickory. The town was first settled in 1840, and the Indian name Ne-o-sho given it as a compromise between Thomas Moseley, Esq., and Hon. J. S. Rains, then residing there. The name signifies "clear, cold water," springs of which are very abundant in this region, and two large ones are within the town limits. This place was incorporated February 27, 1855, and now contains a population of about 600. An excellent newspaper, (the official paper for Newton, McDonald, and Barry Counties,) a good brick court-house and jail, 7 dry goods stores, 3 groceries, 5 blacksmiths, 2 wagon shops, 2 hotels, 1 tailor, etc.

Granby, the city of the mines, is situated 7 miles northeast from Neosho, is a flourishing place and important business center. The first permanent settlements made here were in 1856, and it was named by the Post-office Department at Washington City. (For a full description of the furnaces, etc. at this place, see "Lead Mines and Furnaces of Southwest Missouri," Book II.)

Newtonia is pleasantly situated on Oliver's Prairie, 11 miles from Neosho, 4 from Granby, and 15 from Sarcoxie. Oliver's Prairie takes its name from Lunsford Oliver, who came here and settled, "solitary and alone," in 1829, when his nearest white neighbor was forty miles distant. In the fall of 1831 a few other families came into this section, and in 1832 the county generally began to be settled. Oliver came from Arkansas, but was a Tennesseean by birth. He lived on his farm on Shoal Creek until 1836, when he died. This town was laid out by M. H. Ritchey, in 1857. The "Newton College" is situated near this place, and is the most prosperous and ably-conducted school in Southwest Missouri. It was chartered by the Legislature in 1856. Mr. Ritchey, the enterprising proprietor of the town, has the best farm we saw in this part of the State. He has 530 acres inclosed and under cultivation, besides his extensive pasture. The average yield of corn per acre is 65 bushels; wheat, 30; oats, 60. Timothy, hemp, and Hungarian grass grow very well. He devotes his attention principally to stock growing, and always finds a ready market and good prices. Newtonia has 3 stores, 2 blacksmith shops, 2 carpenter shops, and a stone-cutting establishment, etc , and a population of about 200.

NODAWAY COUNTY.

This is one of the new counties, situated in what was known as the Platte Country, in the northwest part of the State. It is bounded on the north by the Iowa line, and on the west by Atchison and Holt Counties, which separate it from the Missouri River. The first settlements made here were in 1841, by Missourians and Tennesseeans. In 1860 it had a population of 5264.

This county embraces both prairie and timber; the soil is fertile, undulating, and in some portions broken. Below we give the amount of taxes collected in the course of eight years, commencing with 1852, which will show the increased value of property in this county. The percentage, we presume, was about the same, or nearly so :—

1852	taxes collected		$1695 80	1856	taxes collected		$4634 70
1853	"	"	1844 31	1857	"	"	7613 92
1854	"	"	2650 00	1858	"	"	15,600 70
1855	"	"	3477 40	1859	"	"	16,210 50

Taking the per centum to be the same—the increase in property subject to taxation being added—the increase in wealth has been very great.

The amount of taxes now collected is almost ten times as much as in 1852, when it was only $1695; now it is $16,210. The whole property of the county was assessed in 1859 at $1,800,000; the double of which would be $3,600,000, and would be nearer its real value. We give below the property assessed for 1859 and its valuation as we find it on the assessor's book.

Acres of land, 467,396; valued at $1,712,543. Polls, 1237. Money and notes, $199,812. Slaves, 161; valued at $62,000.

This, when we take into consideration the newness of the county, is a decided increase. There are but few counties that can say this much, and show the figures in support of it.

Another important feature in Nodaway County is the school fund. The swamp land fund is $69,000; the township fund is $23,000; total, $92,000—the interest of which is all that can be used. This fund is on interest at ten per cent., which, with a State school fund of $1729 83, will make in all nearly $11,000. Between $7000 and $8000 are yearly appropriated to common schools, which is almost sufficient of itself to school every child in the county. Much has

been done to establish schools, and in this respect this is not behind most of the older counties.

It would be useless to speak at any length concerning the soil, which cannot be surpassed in fertility. This county is also well watered. Three large streams, the Platte, Hundred-and-Two, and Nodaway, all run through the county, affording the very best privileges for machinery of every description.

We have statistics of farms that have produced of corn, 120 bushels to the acre; wheat, 40; rye, 35; barley, 30; oats, 35; buckwheat, 50; potatoes, 250; onions, 300; beets, 250; carrots, 200; and turnips, 400 bushels to the acre. Of timothy and clover, 3 tons each; and Hungarian grass, 4 tons to the acre. Unimproved lands are worth from $5 to $10 per acre; and improved, from $20 to $50, according to quality, location, and improvements. Farmers are much needed, and will find good soil, good water, and a healthy country.

Manufacturers will here find good water power on the Nodaway, One-Hundred-and-Two, and Platte Rivers, which traverse the county from north to south, and the surrounding country furnishes the raw materials, as well as a home market for mills and manufactories.

Churches and Schools.—There are in the county 2 churches, 30 district schools, 6 lawyers, 14 physicians, 12 merchants, 5 grocers, 1 druggist, 1 tinner, 4 blacksmiths, 2 wagon-makers, 1 saddler, 1 tailor, 2 shoemakers, 4 cabinetmakers, 6 carpenters, 12 saw-mills, and 7 flouring-mills.

MARYSVILLE, the county-seat, is 75 miles from St. Joseph, and has a population of 400; **Jacksonville**, 150; **Xenia**, 150; **Guilford**, 125; **Quitman City**, 100; **Littlesville**, 100.

OREGON COUNTY.

This county is situated on the southern line of the State, was, until recently, one of the largest counties, as shown on old maps. It now contains but about eighteen townships. Population in 1860, 3448, Howell having been formed from the western part of it. A great proportion of the land is too rough and sterile for profitable cultivation—probably not over one-fifth being what can really be called fertile farming land. It was all naturally timber land, principally oaks, hickory, ash, and walnut; but the north part of the county embraces

some fine large pine timber, which, to render available, must be sawed by steam-mills, there being no water power convenient.

The first settlement was made in 1803 by Charles Hatcher. The first settlers for a number of years were obliged to take their furs, peltries, and wild honey to Cape Girardeau, 135 miles distant, on horseback, and bring in return their goods by the same conveyance. Their nearest point to a river outlet now is Pocahontas, Arkansas, 55 miles, and to railroad, at Ironton, 110 miles.

This county is well adapted to fruit growing and grazing, as both soil and climate are favorable. Lead and copper ore has been found in the county, but no mines have been opened.

Churches and Schools.—There are 15 places of meeting in the county by the Methodist, Baptist, and Presbyterian denominations. Of schools, 16 free schools and 6 private are taught. Good teachers are much needed.

ALTON, the county-seat, is near the center of the county, and has fair prospects of becoming an important business point. **Thomasville**, on the head waters of the Eleven Point River; **Lowassie**, in the northeast corner; **Engleside**, in the east; **Webster**, in the southern; **Warm Fork**, in the southwest; and **Jobe**, in the southeast corner of the county, are all new towns.

OSAGE COUNTY.

This county is situated near the center of the State, and is bounded on the north by the Missouri River, and on the west by the Osage, and four townships in its southeast corner are traversed by the Gasconade. Population in 1860, 7996. The first settlements made here were by persons from the Eastern States and by Germans. The general character of the country is uneven, and some portions broken and sterile. The valleys and much of the table-land is fertile, and what are known as the "breaks of the Osage" have recently been discovered to be rich in lead ore, and the citizens believe iron ore will be found abundant in some parts of the county. Pieces of iron ore have been picked up on the surface of several of the hills; and surface lead ore, yielding eighty per cent. of pure lead, has been found in a number of places near the Gasconade River. Excellent limestone is abundant in several parts of the county, some of which is rich with fossils of various species. This county is well timbered

with oak, hickory, black walnut, etc., and saw-mills would do well on the Gasconade, Osage, or Maries; and the lumber or furniture could easily be transported down these streams to the Pacific Railroad, or to the Missouri River. Several Germans are turning their attention to grape culture, and are confident that the cheap "flint hills" will produce more with less labor than more fertile soil cultivated for other purposes.

Osage is not strictly an agricultural county, yet the average yield per acre of the farms under cultivation is as follows: corn, 75 bushels; wheat, 30; rye, 40; barley, 50; oats, 50; buckwheat, 50; tobacco, 1500 pounds; and the root crop and fruit product is probably a little less than an average with counties in the same latitude.

Churches and Schools.—Of churches, there are in the county 6 Methodist, 4 Catholic, 2 Baptist, and 37 schools, with 2910 pupils; and $749 were raised to build new school-houses. There are 4416 acres of school lands unsold. District schools are taught as long as the school fund will justify; then in some districts private schools are kept the remainder of the year.

Of **Business Houses** there are merchants, 28; grocers, 15; druggist, 1; lawyers, 6; physicians, 8; blacksmiths, 18; wagon-makers, 8; saddlers, 5; tailors, 7; shoemakers, 25; cabinetmakers, 10; carpenters, 24; coopers, 4; steam saw-mills, 6; steam and water power flouring-mills, 4.

Our informant, A. J. Seay, Esq., of Linn, says: "We want tinners, tobacco manufacturers, tanners, plow manufacturers, coopers, a druggist, and, above all, an intelligent newspaper editor, and printing-office; also a few enterprising go-ahead farmers, manufacturers, mechanics and capitalists."

LINN, the county-seat, is a brisk business center, and has a population of 100; **Westphalia**, 250; **Castle Rock**, 75; **Chamois**, 150; **Rich Fountain**, 50.

OZARK COUNTY.

This county is situated in the southern portion of the State, and is bounded on the south by the Arkansas State line. It formerly contained an area of about 1000 square miles, but Douglas County has recently been formed from it, which reduces its area very nearly one-half. Population in 1860, 4921. It is watered by North Fork of White River, Little North Fork, and Bryant's Fork of the last-

named stream, affording good water power. The general surface of the county is hilly or mountainous, and covered with forests of timber consisting of oak, hickory, and yellow pine, the latter attaining a great size. Cultivated land is worth from $3 to $8 per acre; uncultivated, from 50 cents to $1 50. The largest yield we have reported in the county is, of corn, 90 bushels to the acre; wheat, 30; and oats, 30. But little attention given to farming, as yet.

Business Statistics.—There are in the county 8 physicians, 5 merchants, 5 grocers, 15 blacksmiths, 2 wagon-makers, 4 water-power saw-mills, 8 water-power flouring-mills. Much of the lumber used for building in several adjoining counties west and northwest is made in Oregon and Douglas, and probably as good yellow pine as there is in the State is found here.

Churches and Schools.—The several denominations, Methodist, Christian, Baptist, and Presbyterian, have congregations here. There are twenty free schools and 1199 pupils in the county. Amount of State school money appropriated in 1859 was $824 55. Good school teachers are much needed, and we are assured would be well supported.

ROCKBRIDGE, the county-seat, is the only town of note in the county. It has a favorable location on the North Fork of White River, a little south of the center of the county, and bids fair to become a place of importance.

PEMISCOT COUNTY.

This county is situated in the extreme southeastern corner of the State, bordering on the Mississippi River, which separates it from Tennessee, and touching on the Arkansas line on the south. Population in 1860, 3191.

Physical Features.—This county is in the district that suffered so much from the effects of the earthquakes of 1811 and 1812, and the numerous lakes spread over the county are left as "landmarks" of that unusual occurrence. The greater part of the county is subject to an annual overflow from the Mississippi River, but the citizens are building a levee which will protect them from this, and reclaim many thousand acres from inundation. The soil is fertile bottom land of an alluvial formation, heavily timbered with oaks, ash, elm, hickory, cottonwood, sycamore and cypress, and the climate as healthy as any

section similarly situated. There are numerous mounds in various parts of the county, and in some instances they appear to have been built of stiff clay or sun-dried brick which have dissolved from the action of the elements, and now form a shapeless mass. From the number and regularity with which they are placed these may have been villages at some period centuries past.

Natural Resources.—We are indebted to GEORGE W. CARLETON, Esq., of Gayoso, for the following information: "Iron is the only mineral found in the county. Professor Swallow, State Geologist, says that bog ore is abundant in Little River township, in western part of the county. We need flouring and grist mills. We have as good an agricultural district as can be found in any part of the Union. We have but very little waste land. All kinds of grain are produced here—wheat, oats, corn, rye, millet, etc. produce well. We have the best stock range in the world; our grasses are No. 1, the climate favorable, and the cattle look well, but we have no improved stock. Hogs fatten mostly in the woods. Farmers and stock growers are very much needed; we have very few if any real scientific, practical farmers, and I know that if our soil was tilled as it should be, it would produce double the quantity it now does. We can offer great inducements to the well-informed farmer or stock grazier. We have a good shipping point, and the produce can be sent to Memphis or New Orleans at trifling cost. We also want carpenters, joiners, brickmakers, brickmasons, blacksmiths, wagon-makers, and coopers. Send us any good, honest, industrious persons, and we guarantee they shall do well. Most of the lands in this county are subject to the annual inundations of the Mississippi River, but the levee will soon be completed, which will entirely remedy this."

History.—This section of country, it is supposed, was first settled as early as 1700 by Spanish colonies, and in the year 1800 by citizens from various parts of the United States. This country was almost depopulated by the terrible earthquakes of 1811 and 1812, which drove the citizens almost entirely out of it. Of those who were then inhabitants of this vicinity, we can learn of but two residing here now—Colonel John H. Walker and Nicholas Feror. A number of lakes were formed at that time by the settling of the earth's surface. The largest of which in this county is Lake Pemiscot, some five to eight miles wide from east to west, and twelve to fifteen miles long from north to south.

Churches and Schools.—The Methodists and Baptists have each churches in Pemiscot. There are twelve organized school districts, but one school-house in 1859, and one private school. Amount of

school lands unsold in 1858 was 4160 acres; amount of school money appropriated in 1859 was $602 37. Number of children entitled to receive education in public schools, 758.

GAYOSO, the county-seat, is fifty miles from New Madrid, and five miles from Caruthersville, and was first settled by the French and Spaniards early in the present century. It contains a Baptist and a Methodist church, 1 hotel, 2 saw-mills, etc. Population about 250.

Caruthersville was first settled by Colonel John H. Walker, in 1805; is situated five miles from Gayoso, and contains 125 inhabitants.

Cottonwood Point, twenty miles from Gayoso, has 100 population, 1 church, several stores and mechanics' shops. Caruthersville and Solitude are villages.

PERRY COUNTY.

This county is situated in the east-southeast part of the State, is bounded on the east by the Mississippi River, on the south by Cape Girardeau and Bollinger Counties, and on the northwest by St. Genevieve. Besides being watered on the northeast by the Mississippi, for thirty miles, the county is also watered by Apple, Saline, Cape Cinque Homme, and Bois Brulé Creeks. The county was formed from a portion of St. Genevieve, in 1820. Its population at different times has been as follows: In 1822, 1599; in 1840, 5760; in 1850, 7220; in 1856, 7995; in 1860, 10,017.

The surface is generally broken, well timbered, and the soil adapted to most agricultural products. Both iron and lead ores have been found in several localities, but are not worked to any extent. An excellent quality of white marble is found also, which when quarried is soft, and variegated with blue; but after it has undergone the process of polishing this blue assumes a green tinge, which adds much to its beauty. It hardens upon exposure. An excellent quality of limestone also abounds here. The *Bois Brulé* (burnt wood) bottom which extends along the Mississippi, three miles in width and some twenty-five in length, is one of the most fertile alluvions found anywhere. The immense yields of agricultural products from these bottoms are truly surprising. The soil of this county is admirably adapted to the cultivation of the light tobacco which always commands a high figure in the New Orleans market.

History.—Perry County was first settled in 1800 by Aquilla Higgins, H. McAtlee, Lancton, Moon, and their comrades, from Kentucky. In 1811, when Jason Harrison, Esq., of Jefferson City, passed through the county, it was sparsely inhabited, and there were no towns, but several small "settlements" only. St. Mary's Landing was then called "Camp Rowdy," and Colonel Amos Bird had a salt manufactory in successful operation, and supplied an extensive district of country. The price for salt then was from $3 to $5 per bushel. There was a settlement in "Bois Brulé," consisting of about a dozen families; another on a branch of Saline Creek, called the "Long Tucker Settlement;" and one in the barrens, where St. Mary's College now stands, called "Short Tucker Settlement," the latter being almost entirely Roman Catholics; and except here and there an isolated Protestant family, the above constituted the population of what is now Perry County.

Industrial Pursuits.—There are in the county, of newspapers, none; lawyers, 3; physicians, 9; merchants, 20; druggist, 1; carding machines, 1; steam saw-mills, 7; steam flouring-mills, 3; water saw-mills, 3; water flouring-mills, 3; hotels, 2, etc. Carpenters, cabinetmakers, brick and stone masons have been scarce. A Catholic College has been established here about twenty years, and is represented as in a flourishing condition.

Schools.—Besides the Catholic College, there are forty district schools, in which 735 out of 2914 children are taught by forty-two teachers, at a total salary of $2672.

PERRYVILLE, the county-seat, is situated near the center of the county, and has fair prospects of becoming a fine business point. It is the only town of importance in the county.

PETTIS COUNTY.

This county is situated in the west central part of the State, west of Cooper and south of Saline, each of which border upon the Missouri River. This county is drained by the head streams of La Mine River, namely, Flat Creek, Muddy Creek, and Heath's Fork, which unite near the northeast border. Black River, an affluent of La Mine, flows through the northwest part. The principal timber of the county consist of groves situated along the streams, stretching some distance up their smaller branches, forming a fair proportion of

timber land for the cultivation of the prairie of the county. The surface of the county is principally prairie, and generally very fertile. Large and lasting springs of clear cold water flow from the earth in various locations, and salt springs have been found from which salt was manufactured for the neighborhood.

Pettis County was first settled about the year 1818, by Nimrod Jenkins, and others. It has an area of 650 square miles, and contained a population in 1840, of 2930; in 1850, of 5143; and in 1860, of 9503.

A. Wetmore, Esq., in his description of this county, in 1837, said: "The good quality of the soil of this county, together with other numerous advantages, form a combination of attractions which have peopled the county very densely with an excellent class of citizens who are now in easy circumstances, and may, with moderate exertion, acquire as great an amount of riches as avarice could pray for, or honest thrift desire." His prediction has been more than verified. The county is now well settled by industrious farmers, and 436,577 acres of land subject to taxation, valued at $2,435,635. Of slaves in the county there are 1655, assessed at $765,011.

Of farm products the most profitable crops are corn, wheat, hemp, and grasses, which yield as follows: grapes, 100 bushels; hemp, 1200 pounds; tobacco, 800 pounds; flax, 200 pounds; corn, 100 bushels; wheat, 50 bushels; rye, 20 bushels; barley, 40; oats, 50; buckwheat, 20; potatoes, 150; timothy, 1½ tons; clover, 2 tons; Hungarian grass, 3 tons per acre. Chinese sugar cane, fruit of all kinds, and vegetables yield well. Unimproved lands are worth from $5 to $25; improved, from $15 to $30. The amount of taxable property in this county, in 1858, was $4,036,317, showing an increase over the preceding year of nearly 60 per cent.

Minerals.—Coal, iron, and lead exist in this county in paying quantities, but the latter have never been worked. The banks of coal are inexhaustible, and will soon be traversed by the Pacific Railroad, which is in course of construction through the county.

Inducements to Immigration.—These are numerous and varied. Fertile soil, well adapted to all the purposes of the farmer, horticulturist, or stock grower; an abundance of all kinds of building materials; inexhaustible beds of coal, and prospect of good deposits of lead ore; several unimproved sites for milling or manufacturing, where the water power is unimproved; good demand for mechanics, and all kinds of producers and laboring men, especially those who wish to open farms, and contribute to the real wealth and prosperity of the county.

Churches and Schools.—The number of members are: of Episcopalians, 50; N. S. Presbyterians, 200; Methodists, 500; Baptists, 500; Catholics, 200. There are four private institutions—a male high school, located on Heath's Creek, in the northern part of the county; and a female high school in the same neighborhood; and one male and one female institution in Georgetown. Georgetown College is ably conducted and well patronized. It has an endowment of $150,000 in bank stocks and cash, yielding from six to ten per cent. This endowment was made by the Baptists of fifteen counties of Kentucky. The College is under the auspices of the Baptist denomination, and an excellent opportunity will be found here for those young men who wish to prepare themselves for the gospel ministry. The theological department is under the instruction of President D. R. Campbell, LL.D. Campbell College was incorporated December 2, 1846; Georgetown Female Institute, March 2, 1855; and Elden College, March 3, 1855. Of free schools, there are nearly fifty in the county. In 1857 there were thirty-nine school-houses, and $2517 30 raised to build and repair school-houses. There were, in 1859, 2650 pupils entitled to the common school fund, of which the State has appropriated $2123 82 for 1859. The schools, both public and private, are well patronized,

GEORGETOWN was selected as a site for the county-seat in the spring of 1836, and a compactly-built town of several hundred inhabitants has sprung up. There were settlements in the vicinity of the town in 1821. The town is pleasantly situated on the eastern border of a prairie, which is about ten miles wide. There is an abundance of timber contiguous to the town, and some of the best coal banks in the county are near the corporate limits. There are in Georgetown Presbyterian, Methodist, Christian, and Universalist churches, a female seminary, Masonic Lodge, weekly newspaper, steam flouring and grist mill, bookstore, 2 hotels, and all kinds of mechanics, stores, and professional men. Population in 1859, 700.

Of other towns in the county there are **Longwood, Dunksburg, Arator, Farmer's City, Priceville, Roletta, Lamonta, Fair View, Spring Fork, Fauner City,** and **Sedalia.**

PHELPS COUNTY.

This county is situated in the southeast portion of the State, bounded on the east by Crawford, north by Gasconade and Maries, west by Maries and Pulaski, and south by Texas and Dent Counties; and contains an area of 612 square miles. Population in 1860, 5211.

History.—This county was formed from Crawford, and organized November 13, 1857. The first and as yet most important settlement made in the county is at the Maramec Iron Works. These pioneer iron works of Missouri are situated in section 1, township 37 north, range 6 west, in Phelps County, and are driven by a large spring, which is the chief source of the Maramec River, and discharges in the dryest seasons ten thousand gallons of water per minute; and upon a head or fall of twelve feet, turns seven large water-wheels which drive a furnace-blast, forge-blast, ancony forge, chaffery forge, bloom forge, grist-mill, and saw-mill.

These works were first commenced in 1826, by Thomas James and Samuel Massey, both of Ohio, Mr. Massey moving out with his family to superintend the building. The furnace was completed in the year 1829, since which time, until the last few years, it has been conducted upon rather a small scale; making only enough iron, as a general thing, to supply the home market and the country lying west. The bar-iron was made upon the old plan of drawing out under a trip-hammer, which, although it is rather old fashioned and slow, has never been improved to make a better quality. The difficulty of transportation heretofore has entirely excluded the pig metal made at these works from market, although Mr. Massey has several times sent blooms to the Cincinnati and Pittsburg markets, by taking them down the Maramec River in flats. Also by hauling them to the Gasconade River (twenty-five miles) and boating them down that stream, both of which would have been a losing business had it not been for the ease with which the ore was reduced and the superior quality of the iron, which made it bring a higher price than any blooms ever taken to those markets. The facilities of transportation now offered by the southwest branch of the Pacific Railroad—which is at this time completed to within eight miles, and will be within five miles when it reaches Jamestown (which is the station for the works)—makes these works one of the most advantageous places in the State for the manufacture of pig metal and iron in all its branches.

The water power, considering the convenience and economy with which it is applied, is not equaled in the West. The ore bank, which is a mountain of solid specular ore, is inexhaustible, and situated only one-third of a mile from the furnace; it being a down grade from the bank to the furnace, four horses are able with ease to bring down five tons of ore at one load. The furnace now in blast is new, having been built in the year 1857, by William James, son of the original proprietor; is thirty-four feet high, thirty feet base, and nine and a half feet across the bosches, and is built of the best materials and in the most approved manner. The blowing apparatus is also new, and constructed with the latest improvements. It is blown with cold blast, and now making fourteen tons No. 1 metal per diem, and using one hundred and ten bushels of charcoal per ton. There has been one blast made at this furnace where the amount of charcoal used was *ninety-seven bushels to the ton*, by actual measurement. The iron is peculiarly adapted to manufacturing steel, boiler-iron, sheet-iron, rivets, and heavy machinery castings, car wheels, etc. The ancony forge is used for making anconies, which are drawn out into bar iron in the chaffery; there being two ancony and one chaffery fires, with a large trip-hammer in each forge, which make some 250 tons hammered iron per annum. The bloom forge has five fires, and has for the last few years made from 1000 to 1200 tons of blooms per year. The grist-mill, besides being a great convenience to the place and country generally, is also a source of great profit. There is belonging to the furnace and forges some ten thousand acres of land, which was located at an early day with especial reference to the ore banks, (of which there are a number other banks as good as the one used at the furnace;) also timber and good quality of soil—at least one-half of the land being of the best quality for farming purposes, after it is cleared of the timber. The buildings at the works all belong to the proprietors, are of a good class, and sufficient to accommodate all the hands required in the prosecution of the business; which, taken together, with forges, furnaces, etc., make quite a picturesque village. The store, at which there is some fifty thousand dollars' worth of dry goods, groceries, and provisions (but no whisky) sold per annum, is a great convenience to the surrounding country. We are informed this property is to be sold, in order to close up the affairs of the estate of Thomas James, deceased; and would suggest to capitalists that there are few if any better chances for investing in iron works anywhere in the West.

Mineral Resources.—Specular iron ores are found in several localities in townships 37 and 38, range 6 west; specular and hema-

tite, in township 36, range 7, and township 38, range 8; and specular, in townships 37 and 39, range 8; and no hematite, in township 39, range 8; and hematite and sulphuret, in township 37, range 7 west. Lead ore (sulphuret) is found in townships 36 and 39, range 8; township 36, range 9; townships 38 and 39, range 7 west.

Physical Features.—The surface of this county is rolling, the western portion being most broken, particularly in the vicinity of the streams, where (after leaving the valleys) the soil is thin, and the surface broken into rough ridges, which are succeeded, farther from the streams, by more moderately undulating slopes and better soil. Some of the finest farming lands in the county are in the woodlands and prairies, upon the divide between the Maramec and Borbeuse. Farmers who have made the experiment, are much in favor of subsoiling on these lands. "The valleys of the Little Piney, Spring, and Dry Fork, of Maramec, and Borbeuse have a width varying from one hundred yards to half a mile; and their soils are remarkable for their productiveness, throughout nearly the whole extent. The valleys of the smaller streams also contain many very desirable farm sites."* These valleys are generally heavily timbered with white and bur oak, hickory, white and black walnut, maples, dogwood, linden, hackberry, honey locust, cottonwood, and thorn. A variety of grapes are found on the ridges, and will produce well if cultivated. Good water power, principally unimproved, may be found upon Bear Creek, Little Piney, Dry Fork, Maramec, and Borbeuse.

Industrial Pursuits.—The principal business point of the county is Maramec, and as yet but few of the mechanical branches are represented. There are now in the county, of lawyers, 5; physicians, 8; merchants, 15; druggist, 1; blacksmiths, 11; wagon-makers, 10; carpenters, 15; steam saw-mills 2; water saw-mills, 1; steam flouring-mills, 2; water flouring-mill, 1; hotels, 3; churches 1; and schools, 16.

ROLLA, the county-seat, is situated near the center of the county, and on the line of the South West Branch Railroad. It is a pleasant and healthy place, with a population of about 200.

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* Geological Report.

PIKE COUNTY.

This county is situated on the Mississippi River, between Ralls and Lincoln Counties, and contains an area of 600 square miles. This county is among the oldest in the State, and was first settled by persons from the Southern States. It contained, in 1860, a population of 18,338.

The face of the country is undulating, and in some places near the river quite broken. Originally there was about one-third of the county prairie land; the remainder being well covered with walnut, linn, hackberry, sugar-tree, elm, ash, and black and white oak. There are numerous fresh water and saline springs in the county. Considerable salt was manufactured for home consumption at Buffalo Lick, about three miles from Louisiana, in early times; but none has been made for a number of years. Elk Lick, in the northwestern part of the county, has gained some popularity as a watering-place. The county is well watered by Salt River, Cuivre River, and their numerous tributaries, also a number of creeks that rise in the county and empty into the Mississippi. The county is underlaid with limestone, sandstone, soapstone; and Missouri buhr-stone is also found in some localities.

The **Soil and Productions** are much the same as those of Ralls and Lincoln. On the prairies the soil is a deep-black loam, which is exceedingly fertile. That on the upland, especially on the ridges, is thin, and more particularly adapted to small grain and fruit. Peaches are not a certain crop in this latitude, with the present mode of cultivation. Farmers, however, regard this as a very good agricultural county.

Among the **Natural Advantages** of the county may be named good soil for all kinds of grain, grasses, fruit, and vegetables, healthy climate, good water, plenty of timber, and also stone coal in the western part of the county; easy access by river to good markets. Stock growers, farmers, mechanics, and manufacturers are much needed.

Churches and Schools.—There are about 25 churches in the county, principally Methodist, Presbyterian, Baptist, and Episcopal. There are a number of district schools in the county, supported by the State school fund, and several excellent private schools, taught by experienced teachers.

BOWLING GREEN, the seat of justice, is situated near the cen-

ter of the county, 11 miles from Louisiana, on the Mississippi River. The place was first settled in 1819, and in 1837 "The Salt River Journal," an interesting paper, was published here. The town was incorporated February 12, 1857, and now contains 2 churches, a Masonic Lodge, 3 hotels, steam saw and grist mill, 2 manufactories, with other business houses, and 300 inhabitants.

Louisiana, the largest town in the county, and the principal shipping point, is pleasantly situated on the Mississippi, 114 miles above St. Louis, and contains, of churches, 1 each, Presbyterian, Christian, Baptist, Methodist, Cumberland Presbyterian, and Catholic, 2 newspapers, (Democratic Herald and The Louisiana Journal,) a branch of the State Bank, some 35 stores, and other business houses in proportion. It was incorporated March 1, 1855. Population about 3000.

Clarksville is situated upon the Mississippi, 12 miles below Louisiana, and is a place of some commercial importance, containing 2 churches, a Masonic Lodge, 2 schools, 2 carding machines, 2 flouring and 3 saw mills, 2 hotels, and a fair representation of business houses of all kinds. Incorporated February 24, 1853; population about 1000. Clarksville is situated upon the site of an old stockade fort. Colonel William Shaw, now of Marquette County, Wisconsin, states that, "in 1812, while he was engaged with a party of twenty men in building a temporary stockade where Clarksville now stands, a band of Indians surprised and killed the entire family of one O'Neal, about three miles above Clarksville. In company with Mr. O'Neal," continues Colonel Shaw, "I hastened to the scene of the murder, and found all killed, scalped, and horribly mangled. One of the children, about a year and a half old, was found literally baked in a large pot-metal bake-kettle, or 'dutch oven,' with a cover on; and as there were no marks of the knife or tomahawk on the body, the child must have been put in alive to suffer this horrible death; the fat in the bottom of the kettle was nearly two inches deep."

Spencerburg is situated 2 miles east from Spencer Creek, and 15 miles from Bowling Green, contains 1 Presbyterian, 1 Christian, and 2 Baptist churches, 1 flouring-mill, 2 hotels, steam saw and grist mill, and a fair representation of tradesmen, and 125 inhabitants.

Prairieville, 12 miles from the county-seat, contains 1 Episcopal and 1 Methodist Church, a Masonic Lodge, 2 hotels, an academy, a creditable number of business houses, and a population of about 100.

Frankfort was incorporated March 7, 1859, and contains 400 inhabitants; **Harmony**, 50.

PLATTE COUNTY.

This county is situated in the great bend where the Missouri River changes from its southern to an easterly course. The county is bounded on the west and south by the Missouri River, on the north by Buchanan, and on the east by Clay and Clinton Counties. The population of Platte County in 1840 was 8913; in 1850, 16,929; in 1856, 18,482; and in 1860, 18,495.

Physical Features, Soil, and Productions.—This county forms the southern point of the "Platte Purchase." The surface of the county is diversified with forests of valuable timber and undulating prairies, the soil of which is unsurpassed in fertility, and is generally well cultivated. It is well watered by Platte River, from which it derives its name, and which is navigable for small boats a distance of forty miles, from three to four months in the year. The county is also drained by Brush Creek, Rush Creek, Bee Creek, and their numerous tributaries.

In 1850 this county produced more hemp than any other county in the Union, more wheat and butter than any other in Missouri, and was surpassed in the amount of corn raised by but one county—Buchanan. The return of 1850, as shown by the census, was, of corn, 1,814,287 bushels; of wheat, 129,067; and of hemp, 4355 tons. The value of the product of manufacturing establishments for that year was $789,484—much larger than any agricultural county in the State, except St. Louis. In point of intelligence, industry, or genuine hospitality, the people of Platte are second to none in the State.

The following in regard to the culture of hemp will be read with interest:—

THE HEMP CULTURE.

MESSRS. HUYETT AND PARKER.

GENTLEMEN—You requested me to give you my experience in raising hemp. I have resided in this county for some twelve years, and have been raising hemp every year, and my experience in the culture is not as flattering as some, until I commenced raising the Chinese variety.

I think on good land the Chinese hemp will yield, on an average, 1120 pounds per acre; 1500 pounds has been raised per acre on a crop of thirty-five acres; that I consider an extraordinary yield.

My usual time for sowing is as early in April as the ground will suit to receive the seed; from that time until the first of August there is nothing to do with the hemp. I then have about one month of heavy work to get my crop cut and put into shocks; the spreading and raising after it is rotten is light work, and the process of cleaning now is light in comparison to the old hand brake.

I am now using one of Little's hemp machines, and have broken from 2200 to 3000 pounds per day, and the hemp poorly watered. I have this season, taking up the hemp, hauling, attending to the machines, and cleaning, in all thirteen hands. I learn the patentee now has a cleaner attached to his machine, which will dispense with several hands. I can raise on my land hemp for twelve or fifteen years in succession, without manure or rest.

In regard to wheat, I think our soil is not so well adapted to that product as it will be after it has been cultivated for some years. Owing to our light soil, rye does better than wheat.

Corn succeeds as well as any farmer could wish. Our land is well adapted to blue-grass; but, owing to the loose soil, does not afford the same amount of grazing as the blue-grass lands of Kentucky. This will be obviated when our lands become more closed.

Take this county, for soil, fine water, and good timber, and I am of the opinion that there is not its equal in the State.

Respectfully,

E. BARBEE.

Amount of hemp shipped from **Weston**, the principal point of shipment: about 11,000 bales, 3000 tons, was shipped in 1859. About 20,000 bales, or 5000 tons, are annually raised and exported from this county. Eight hundred pounds are estimated an average yield per acre of the "old Kentucky seed;" but a new seed, known as the China seed, is being generally introduced, and is very popular among the hemp growers, and increases the yield to 1000 pounds per acre, or two bales, the average weight of which is 500 pounds per bale.

Educational Institutions.—The "Platte City Female Academy" was established in 1857, and the second catalogue shows an attendance of 181 pupils and 10 graduates. Professor H. B. Todd, Principal; John W. Vawter, professor of mathematics and languages; Mrs. Mary L. Woods, primary department; Mrs. H. J. M. Creal and Mrs. Laura D. Todd, teachers of music; and J. W. Orr, vocalist. This school is very pleasantly situated, ably conducted, and liberally patronized. "Pleasant Ridge Male and Female Academy," situated three miles from Weston, on the Plattsburg Road, and six miles from

Platte City, is also a most excellent institution. Brice W. Vineyard, A.B., President; Professor Jas. F. Bruner, M.D., English literature and natural sciences; assisted by D. F. Moody, Mrs. Mary W. Bruner, and Miss Kate S. Thompson, in other branches. The "Camden Point College" and the "Ridgely Academy" are each good schools, with fine buildings, and pleasant, healthy locations.

Industrial Pursuits.—The following list embraces the principal business houses in the county in the spring of 1860:—

Business.	Weston.	Platte City.	Parkville.	Business.	Weston.	Platte City.	Parkville.
Newspapers	1	1	1	Wine stores	2	2	–
Academies	3	2	1	Breweries	2	1	1
Bookstores	2	1	1	Coopers	3	1	1
Lawyers	5	8	3	Clothiers	5	2	2
Physicians	8	7	4	Bakeries	2	1	1
Dentists	2	1	1	Boot and shoe dealers	4	1	2
Daguerreians	2	1	–	Saddle and harness	2	2	1
Architects	4	2	2	Saw-mills	2	1	1
Surveyors	3	1	–	Flouring-mills	2	1	2
Land agents	4	1	1	Carpenters	12	4	6
General stores	9	6	5	Cabinetmakers	3	2	3
Family groceries	4	2	2	Jewelers	3	1	1
Wholesale groceries	2	1	1	Blacksmiths	6	3	2
Agricultural stores	2	1	1	Wagon-makers	7	1	3
Hardware stores	2	–	–	Painters	4	1	1
Druggists	2	2	2	Hotels	4	4	2
Milliners	4	1	1	Livery stables	3	1	1
Tin and stove stores	2	2	1	Warehouses	5	–	2
Brick yards	4	1	1	Packing houses	2	–	1
Rope works	2	–	–	Tobacco manufacturers	1	1	–
Distilleries	1	1	1	Butchers	3	2	1

PLATTE CITY, the county-seat, is situated on the eastern bank of the Platte River, about forty miles above its mouth, upon an elevated and picturesque location. In 1833 Zebulon Martin established a ferry across the Platte, for the accommodation of government troops, and this was then known as "Martinsville," and the "Falls of the Platte." In 1839 Platte City was laid out upon a quarter section, adjoining Martinsville, and was soon after adopted as the county-seat. The first settlements were made by L. D. Johnson, Z. Martin, G. P. Dorris, and their associates. There are in this city four churches—Presbyterian, Methodist, Baptist, and Christian—a male academy, (Professor F. G. Gaylord, principal,) and a female seminary, under the charge of Professor H. B. Todd—both ably conducted and liberally patronized. The Platte City Atlas (N. D. Short and Brother,

editors and publishers) is an excellent paper, and an able exponent of the advantages of the county. The several branches of mercantile, mechanical, and professional business are well represented. Platte City was incorporated February 3, 1853, and contains a population of about 1000.

Weston, the commercial city of the county, is pleasantly situated on the Missouri River, about 500 miles by water and 325 by land from St. Louis, and about 25 miles from St. Joseph by the Atchison and St. Joseph Railroad, now nearly completed. Population 3500. This is an important commercial and shipping point, surrounded by an excellent agricultural region, under a good state of cultivation. There are here 5 churches—Methodist, Baptist, Christian, Episcopal, and Catholic—a branch of the Mechanics' Bank of St. Louis, 2 insurance companies, an excellent newspaper, ("Platte Argus," by William F. Wiseley,) a high school, select school, and seminary. Population about 3500. The first cabin erected in Weston was in August, 1837, by John B. Wells, Esq., for Joseph Moore. The following fall and winter, Madame Lucy Boone, Robert Bates, S. C. Fugett, and others settled here. Messrs. Murphy & Ferguson had the first grocery store, and Thornley & Lucas and T. F. Warner were the pioneer merchants, commencing in 1839. The town was laid out in 1837, by Joseph Moore, surveyed by Thomas E. Jordan.

Parkville is situated on the Missouri River, (in the southern part of the county,) near the mouth of the Platte River, about 15 miles south-southeast from Platte City. This town owes its origin and rapid growth to George S. Park, Esq., the first settler and projector. The city is well supplied with mercantile, forwarding, and business houses. The "Parkville Courier," published by F. M. McDonald, is ably conducted. The Presbyterian, Baptist, and Methodist denominations have churches here. There are also Lodges of each Masons and Odd Fellows, and an Encampment of the latter. Parkville was incorporated March 3, 1855, and contains 1000 inhabitants. The completion of the Parkville and Grand River Railroad will add greatly to the commercial importance of this place. (See "Railroad" chapter for particulars.)

Other towns in the county are **New Market,** population 300; **Camden Point,** 150; **Ridgely,** 250; **Rialto, Farley, Iatan,** and **Hampton.**

POLK COUNTY.

This county is situated in the southwestern portion of the State, and bounded on the north by Hickory, on the east by Dallas, on the south by Greene, and on the west by Dade and Cedar Counties, and has an area of 624 square miles. Population in 1860, 10,030; slaves 528, valued at $316,800, and 12 free colored.

Polk County was first settled in 1810 by immigrants from Tennessee; and at the present time a large portion of the population is from that State. The county was organized in 1834, and named in honor of Tennessee's favorite statesman, James K. Polk.

Physical Features.—The topography of this county is agreeably diversified with rolling prairies, picturesque hills, and wooded valleys. The surface is generally undulating, except along the streams, where it is broken in many places by rugged cliffs and rocky hills.

Prairies.—The Twenty-five Mile Prairie covers an area of twenty square miles in the northern portion of the county, and is separated on the east by the Pomme de Terre from Sentinel and Flint Prairies, which lie in the midst of the oak woodlands of the northeast. On the east Buffalo Head Prairie extends for several miles, and near the center of the county is Three Mound Prairie; so called from three mounds of vermicular sandrock that rise above the surface. There also are Pleasant Prairie in the southern, and Crisp Prairie on the western borders, and Valley Prairie, which extends from the northwest corner of the county to within nine miles of the center. It is so named from its resemblance to a valley through which a stream appears to have found its way many years ago. It commences at a point nine miles west of the center of the county, and continues in a northwest course to the Osage River, near Oseola, in St. Clair County. The soil is very productive, and many fine farms with their fields of grain and herds of cattle dot the surface. About two-fifths of the county is prairie, which affords excellent facilities for stock raising.

Streams.—This county is well supplied with water: creeks and fine springs are abundant. The principal streams are the Little Sac and Pomme de Terre, which are sometimes dignified by the title of rivers, and traverse the county from south to north. The largest tributaries of the Sac are the Slagle; Bear and Walnut Creeks on the east, and Turkey Creek on the west. The Pomme de Terre is a wild, beautiful stream, and dashes along its rocky bed beneath high

hills and cedar-capped bluffs of silurian rocks. Its tributaries are Polk and Piper Creeks, and Dry Fork on the west, and Hominy and Lindley on the east.

Geology.—Polk County rests upon a formation of magnesian limestone, which is easily quarried, and furnishes excellent building rock. In many parts of the county this formation is superlaid with a coarse brown sandstone, contemporaneous with Hugh Miller's "Old Red" series, destitute of fossils and not valuable for building purposes; and under this deposit lies that singular argillaceous sandrock, known as the vermicular or worm-eaten rock; an estuary deposit containing fresh and salt water shells, and, above this formation, mountain or encrinital limestone is found, which is a fine carbonate, and when burned makes good lime. The bluffs of the Pomme de Terre are magnesian limestone capped with ferruginous sandstone; and in the eastern portion of the county but little of any other formation is found. Sac River cuts through ledges of shelly limestone and through the vermicular rock into the magnesian series. In portions of the county red sandstone is the prevailing rock. In the bottoms of the Pomme de Terre the remains of the mastodon and mammoth, with other species now extinct, have been found imbeded, with the bones of the bear, buffalo, elk, wolf, etc.

Minerals.—No beds or leads of mineral have as yet been discovered in this county; but lead in small quantities is found in the crevices of the magnesian limestone. In the ferruginous sandstone and in the *debris* of the vermicular formation, pyrites of iron and sulphuret of zinc is abundant. On the border of Flint Prairie are the traces of "old diggings," which have led many to believe that some valuable mineral has been found and still exists there; but we presume they were made by the aborigines to obtain flint for their arrow-points.

Soils.—The most productive soil of the uplands is on the limestone hills of the Sac and its tributaries, while the bottom lands or valleys of the same streams are unsurpassed in fertility. The bottoms of the Pomme de Terre are not so extensive or productive as those of the Sac. The former has a basis of silurian rock; while the latter is formed from the disintegrated carbonate of lime. The soil of the prairies is thin and sandy, but productive. In many parts of the county the land is poor, and the timbered ridges are too rocky and sterile for cultivation.

Springs.—There are many fine springs of pure, clear water in this county. Those at Bolivar, Humansville, on Colonel Acock's plantation, and several others are impregnated with sulphate of iron and

other minerals. On the western slope of the Sac River, near the village of Orleans, and ten miles southwest from Bolivar, are the celebrated Wallula chalybeate springs, noted for their medicinal properties and for the beauty of their environs. These springs issue from the rocks high up among the wild, romantic hills of the river, into which they pour their health-restoring water. The surrounding of the spring is exceedingly beautiful. High natural terraces and escarpments of a brown color tower high above the narrow valleys and terminate in isolated, grotesque cliffs. Far below, the waters of the Sac are seen gleaming amid the foliage that fringe its banks; while beyond is Pleasant Prairie, with its broad farms and well-cultivated fields; and in the distance the Ozark hills form an indistinct, irregular outline against the horizon. Wallula is fast becoming a "watering-place" of note, and is rapidly growing in public favor and distinction.

Timber.—The timber of this county is generally of an inferior quality. On the uplands, post-oak and "black-jack" are the only growth; in the bottoms, walnut, sycamore, hickory, and bur oaks attain a large size. The principal portion of the timber used for building in this county is from the pine hills on White River, about ninety miles distant.

Productions.—No hemp is raised here, but tobacco is found to be a sure and profitable crop, and many farmers are turning their attention to its culture. The soil is well adapted to the cereals, roots, and grasses that flourish in this latitude; corn, oats, wheat, and timothy are considered as certain crops; wheat seldom fails, and yields an average of thirty bushels to the acre. The creek and river bottoms produce immense crops of corn, etc. There are many fine orchards here, and apples, pears, peaches, and plums yield plentifully. The soil is well adapted to the growth of the grape; but as yet no attention has been given to this branch of industry. Indigenous varieties grow in abundance. For the want of facilities for transportation of produce to market, stock growing is considered the most profitable business for farmers. Annually about 2000 horses and mules are taken to the cotton States, and a much larger amount of cattle to St. Louis and other markets. Sheep thrive well and increase rapidly here, the climate being most favorable for their growth. There are four steam and five water power mills; two distilleries, and four carding machines in the county.

Churches and Schools.—The Baptist, Christian, and Methodist are the principal religious denominations, and are about equal in point of numbers. There are 56 places of worship in the county,

and 14 ministers of the gospel. Of schools there are 63 in the county, at which 3433 children are taught, and the amount paid teachers in 1860 was $7275. Besides the district schools, three well-conducted academies are supported by private subscription. The educational interests are not well regulated, and the school fund is only sufficient to maintain the schools about one-half the time.

BOLIVAR, the county-seat, and principal town in the county, has a population of 700. It is pleasantly situated near the center of the county, and is surrounded by a heavy body of timber, and is 30 miles north of Springfield, and 50 miles southwest of Warsaw, on the great emigrant road leading from the Missouri River to Texas. A telegraph line and daily coaches of the best class connect Bolivar with the east, north, and south. The public buildings are a large, well-built court-house in the public square, and two brick churches belonging to the Methodist and Baptist denominations. Of **business houses** in Bolivar, there are 7 dry goods stores, 1 clothing store, 1 drug store, 2 saddler shops, 2 blacksmith shops, 2 carding machines, 2 newspapers, 4 doctors, 4 lawyers, and 2 hotels.

Of other towns in the county there are **Humansville** in the northwest corner, population 200; **Pleasant Hope** in the southeast corner, population 60; **Orleans** in the southwest, population 50—fine water power here; **Brighton** in the southern, population 50; and **Fair Play** in the western portion of the county, with a population of 40.

PULASKI COUNTY.

This county is situated in the south central part of the State, bounded on the east by the new County of Phelps, on the north by Maries and Miller, on the south by Texas and Laclede, and on the west by Laclede and Camden. The population of the county in 1836 was 3234; in 1840, 6529; in 1850, (reduced by formation of new counties,) only 410; in 1856, 3034; and in 1860, 3892. The southwest branch of the Pacific Railroad, in course of construction, will pass through this county, and doubtless do much toward developing its resources and increasing its population.

Physical Features.—This county is generally broken, some of the hills and ridges attaining an elevation of from sixty to five hundred feet above the water-courses. The so-called post-oak flats are less rough, and some portions only gently undulating, and others too low

and flat for cultivation in certain seasons of the year. The most extensive flats lie between the Gasconade River, Robidoux, and Big Piney Creek, east of the latter, and also upon the ridges in the northern part of the county. When this soil is broken up by the plow, it becomes more dry and makes very good farming land. The valleys of the streams though narrow are exceedingly fertile, especially the most extensive, which are here called "Prairie Hollows." The county is drained by Gasconade River, Big Piney River, and Robidoux Creek, the valleys of which are heavily timbered with oaks, black walnut, hickory, maple, elm, cottonwood, dogwood, and basswood. Some of the hills near the streams are also heavily timbered.

History.—There were a few settlements made in this county about 1832; and it was here that the notorious "Bank of Niangua" had its center of secret operations. There were some superior engravers connected with it and sharp financiers at St. Louis and through the country, who placed a large amount of it in circulation. We have seen specimens of the money, and the engraving and general execution of the bills compare favorably with much of the paper money in circulation at this time.

Minerals.—From the State Geologist we learn that a large deposit of specular iron ore is found in section 31, township 37, range 12, and brown hematite ore in section 30, township 36, range 11; also on the hills of Bee Branch, in township 37, range 10. Sulphuret of iron is found in a cave in section 19, township 36, range 8; and sulphuret and brown hematite iron ores exist in section 9, township 38, range 13. There are several caves in this county, in some of which large quantities of saltpeter have been found. All kinds of building materials are abundant.

WAYNESVILLE, the county-seat, is situated near the center of the county, on the right bank of Robidoux Creek, one mile above its mouth. There is no other town of importance in the county.

Humboldt and **De Bruin** are small villages.

PUTNAM COUNTY.

This county is situated in the north central part of the State, bounded on the north by the Iowa State line, on the east by Schuyler, on the south by Adair and Sullivan, and on the west by Mercer County. Putnam County was formed from Linn and Adair, and organized in 1845. By the session of 1848–49, Dodge County was formed, and in 1852–53 was dissolved and divided between two adjoining counties. Population in 1856, 5603; and in 1860, 9240. A State line railroad has been projected, which, if built, will be of great advantage to all the counties in this range.

Physical Features.—The eastern portion of the county is principally timber, while the central and western is prairie and timber diversified. The county is drained by Medicine, Locust, the two Blackbirds, Muscle Fork, and Spring Creek. Stone coal of good quality is very abundant. Soil is fertile and well adapted to all farming purposes. Corn is the staple product, and stock growing is receiving considerable attention; cattle, horses, and hogs are principally raised.

Industrial Pursuits.—There are in this county, 1 newspaper, 4 lawyers, 19 physicians, 17 merchants, 2 grocers, 2 druggists, 2 tinners, 12 blacksmiths, 3 wagon-makers, 2 saddlers, 1 tailor, 5 shoemakers, 3 cabinetmakers, 40 carpenters, 18 saw-mills, (5 water and 13 steam,) 3 steam flouring-mills, 2 hotels, and 2 coopers.

Schools.—Putnam County has 42 school-houses, and raised $1292 to build more. There are 3725 children in the county, of whom 1841 were taught by 69 teachers, at salaries amounting to $4579 23. There are 1080 acres of school lands unsold.

UNIONVILLE, the county-seat, has a population of 450; incorporated 1856–7; **Eureka**, 175; **St. John**, 150; **Hartford**, 100; **Central City**, 75; and **Terre Haute**, **West Liberty**, **Medicineville**, **Galesburgh**, and **Martinstown**, each from 50 to 75 inhabitants; **Wyroka**, **Locustville**, **Williamsburg**, **Scotland Ridge**, **Putnamville**, **Shawneetown**, **Omaha**, and **Livonia** are all thriving places.

RALLS COUNTY.

This county is situated in the northeast part of the State, bounded on the east by the Mississippi River, (which separates it from Illinois,) on the north by Marion, and on the South by Pike and Audrain, is traversed by Salt River, and also drained by Lick Creek and Spencer's Creek, upon each of which are several good mill sites. The eastern portion of the county is also well watered by good durable springs, which furnish an abundance of clear limestone water. The present area of the county is about 480 square miles. The population of the county in 1856 was 6594; and in 1860, 7879.

Physical Features, Soil, Crops, etc.—The general surface of the county is broken and undulating—about five-eighths timber land and three-eighths prairie. The timber consists of black and white oak, hickory, elm, walnut, hackberry, sugar-tree, ash, etc. As to fertility, the soil may be set down as above the average. It produces, per acre, 100 bushels of corn, 66 of wheat, (premium on Mr. McCormick,) 30 of rye, 70 of oats, 200 of potatoes, 300 of onions, and other similar crops in proportion. Timothy and Hungarian grass yield very well, while native prairie grass grows luxuriantly, affording pasturage from the middle of April to the middle of October. Probably stock raising is carried on more extensively than any other branch of husbandry in this county. The statistics of the county show that large numbers of mules are raised and exported at very good prices. Sheep raising would also pay well on the prairies. Improved land is worth from $12 to $50; and unimproved, from $10 to $30.

The county and citizens have built two plank and Macadamized roads—one leading from Hannibal (the main shipping point) in the direction of Paris, Monroe County, twenty miles of which is in Ralls County, reaching to the county line. The other from Hannibal to New London, with one of the best bridges in the State, over Salt River, on this road.

History.—The first settlements made in the territory now embraced by the boundaries of Ralls County were previous to 1800, by citizens from older States. The county was erected from Pike County in 1820, and in 1823 the boundaries were thus given in Beck's Gazetteer: "Bounded on the north by the State line, east by the Mississippi and Des Moines Rivers, south by the counties of Pike, Montgomery, Callaway, and Boone, and west by Chariton."

At that time its length was ninety-three miles, with an average width of fifty miles, and contained an area of 4600 square miles, with a population of 1684. In 1849, a cannon, loaded with powder and ball, was exhumed upon the bank of Salt River, directly beneath a large elm-tree, which was two feet in diameter; this locality was about ten miles northwest from New London. When and how this magazine came there, we leave others to decide. The cannon is now in McDowell's museum, St. Louis.

Saline Springs.—Of these there are several in the county. Freemore's Spring, about four miles from New London, was worked early in the present century, but in 1812, during the Indian troubles, work was stopped; and tradition says that the Indians made an attack upon a number of whites at work here, murdered them, and threw their bodies into the spring. Another spring, more extensively worked than the former, is situated five miles west from the above mentioned, and was worked as late as 1832, by Hon. Charles Trabue, ex-mayor of Nashville, Tennessee. We are informed, and we give the story as related, that in 1836, William Muldrow, in boring for salt near the old salt lick in this county, sunk his auger 300 feet, and produced a stream of salt water which rose in a jet fifty feet above the surface. In boring this well the auger passed through sixty feet of solid rock-salt, which, upon trial, Mr. Muldrow found fit for table use; and although never developed, it is probable this salt could be quarried and profitably sold for less than that now brought from other States. At Saverton, on the bank of the Mississippi, seven miles below Hannibal, is a mineral spring, the medicinal qualities of which are attracting considerable attention.

Industrial Pursuits.—There are in the county, 7 lawyers, 13 physicians, 13 merchants, 12 blacksmiths, 3 wagon-makers, 3 saddlers, 1 tailor, 3 shoemakers, 12 carpenters, 8 steam and 4 water power saw-mills, 1 cooper, and 1 hotel. The following classes are not represented in this county, editors, bankers, grocers, silversmiths, tinners, cabinetmakers, and tobacco manufacturers.

Inducements to Immigration.—The farmer will find good unimproved land at fair prices, well watered, either timber or prairie, an abundance of coal for fuel in the western part of the county, excellent pasture for stock growing, facilities for reaching market by river or railroad, and a hospitable and intelligent people.

Churches and Schools.—The character of the inhabitants of this county may be inferred from the fact that their schools are well sustained, and that in 1850, when the total population of the county was only 4775, they had church accommodation for 3750—a much

more liberal provision in this respect than most of the counties can boast of. There are of Presbyterians in the county, 150; Methodists, 400; Baptists, 600; and Catholics, 180, and 18 church edifices. There are 52 schools supported by the school fund, located in different parts of the county, and taught the greater portion of the year. The amount of school money apportioned for this year was $1770 54.

NEW LONDON, the county-seat, was first settled about 1820, but the town was laid out more recently; the post-office was established there in 1825. The town contains 2 churches, a Masonic Lodge, high school, common school, 1 hotel, and 300 inhabitants, with a general supply of stores, shops, etc. **Madisonville, Saverton, Hydesburgh, Sidney, Lick Creek,** and **Cincinnati** have each 50 to 80 inhabitants.

RANDOLPH COUNTY.

This county is situated north of the center of the State, bounded on the east by Monroe and Audrain, on the west by Chariton, on the north by Macon, and on the south by Howard and Boone Counties, which separate it from the Missouri River. Randolph County was organized in 1829. William Goggins, Daniel and Nathan Hunt were the first settlers, and located where the county-seat now stands. There are 316,245 acres of land subject to taxation in the county, valued at $1,602,301. Total valuation of taxable property, $3,541,004. Increase in property since 1858, $734,770. Population of the county in 1860, 11,452.

Physical Features.—The face of the country is generally level or undulating, and about one-fifth prairie, with timber abundant and convenient to most parts of the county. The county is drained by the East and Middle Forks of the Chariton River and tributaries, also by several creeks tributary to Salt River. Limestone, clay for brick, and building materials are abundant. The soil is generally fertile, and produces bountifully of all the grains, grasses, fruits, and vegetables of this latitude. The East Fork of Chariton runs through the county, nearly to the center, its course being west of south, and affords some valuable mill sites. The Middle Fork of Chariton traverses the southern part of the county, parallel to the East Fork. On the divide between these streams is a beautiful body of fertile table-land—a prairie from half a mile to one mile in width

and fourteen miles in length—well adapted to all farming purposes. Stock growing is an important branch of the business of many of the farmers, and stock is becoming one of the staple products. Coal is abundant in nearly every portion of the county. Cultivated land is worth $8 to $20 per acre; and uncultivated, about $4. The North Missouri Railroad passes through the county, about six miles east of the county-seat. A plank-road connects the county-seat with the river, at Glasgow, twenty-five miles distant, and there is a fair prospect of a railroad from Randolph to Brunswick. Thus, it will be seen, the facilities for reaching market are good.

Early History.—Randolph County was first settled in 1820, principally by Kentuckians and North Carolinians. Then its limits extended from the Howard County line to the State of Iowa, including all the territory now embraced in the Counties of Macon, Adair, Schuyler, and other counties north and west. In the year 1829, the news was spread through the settlements that Big Neck, Flying Cloud, Big Thunder, and some others of the Iowa tribe of Indians had declared war and were making a fearful massacre of whites on the borders of the State. In those days the patriotism of the people was easily aroused, and they held themselves in readiness for any emergency. No time was lost in raising a company to go forward and avenge the death of their comrades. The preparations were as extensive then for that war as the Mexican war, twenty years afterward. It was true patriotism and love of country which at that day induced the pioneer fathers and husbands to leave their families unprotected, in a frontier country, subject any moment to fall victims to the red man's rifle or tomahawk. Believing that the names of those who risked their lives in defense of their fellow-countrymen, and fought the early battles of the West, should be handed down to posterity, we insert those of the company that volunteered on this occasion, but are unable to gather sufficient matter for a detailed account of the fight.

Robert Butcher,	Captain.	Joseph Holman,	Private.
Wm. S. Cochrane,	Lieut.	Isham Embrel,	"
Thomas T. Burke,	Ensign.	Wright Hill,	"
Thorrett Rose,	Sergeant,	Nelson Johnston,	"
John Dysart,	"	Nathan Decker,	"
John Dunn,	"	Aaron Wilkinson,	"
Thomas Prather,	"	Tilman Belt,	"
George Green,	Corporal.	John Midley,	"
James Holman,	"	William Elliott,	"
John Cooley,	"	Josiah Davis,	"
Josiah Rogers,	"	Benjamin Hardin,	"

PIONEER LIFE IN MISSOURI IN 1820.

Samuel Gooding,	Private.	John Kimbrough,	Private.
Joseph Hannitt,	"	James Barnes,	"
Silas Shirley,	"	William Lockridge,	"
Wm. Tompkins,	"	Joseph Oliver,	"
John Peeler,	"	L. B. Giddins,	"
Fielding Cockrill,	"	Thomas I. Samuel,	"
Lewis Bradley,	"	Powell Ormsby,	"
William Holman,	"	Joseph Gooding,	"
George Dockins,	"	Elijah Burton,	"
Edwin T. Hickman,	"	Ignatius Noble,	"
Robert Dysart,	"	Samuel C. Davis,	"
Greenup Wilcox,	"	Jeremiah Biswell,	"
Esquire Holman,	"	James Wells,	"

In 1832, during the Black Hawk war, a company was formed in this county, commanded by Captain A. Goodrig, but we have been unable to procure the names of the company in full. And although the war was settled before they reached the scene of action, this company deserve great credit for the bravery and public spirit they manifested, by enlisting and marching forward to protect their country from the depredations of hostile tribes; and they really deserve as much consideration as if they had fought.

"In those early days in Randolph County," justly remarks our informant, a worthy old pioneer, "the people were all upon an equality —no aristocratic distinctions prevailed. The man with the buckskin hunting-skirt, and the woman with a calico dress, were as much respected and esteemed as though dressed in the garbs of kings and queens. Distinctions in dress are a scandal to the nation, and should by all means be banished; and every good man should pray for a return of the good old days of primitive simplicity."

Churches and Schools.—Thirteen church organizations are all we could learn of in this county, and are principally of the Methodist, Baptist, Christian, Presbyterian, and Episcopal denominations. Mt. Pleasant male and female College, located at Huntsville, was organized about one year ago, and is under the control and patronage of the United Baptists, and has a reputation of being well conducted and liberally patronized. In 1858, there were 47 schoolhouses, and 3239 school children in the county. The amount of money apportioned for 1859 was $2277.

HUNTSVILLE, the county-seat, is located near the center of the county, about six miles west from the North Missouri Railroad. It now contains an ably-conducted college, (Mt. Pleasant College;) 4 churches—Episcopal, Baptist, Methodist, and Christian;

Masonic and Odd Fellows' Lodges; 2 newspapers, the "Citizen" and "American;" a book-store; 2 flouring and 3 saw-mills; and a full complement of enterprising business men, representing every branch. The other towns are all growing rapidly, and are good business points, surrounded generally by a well-settled country, peopled by industrious and intelligent citizens.

Roanoke, population, 300; **Renick**, 200; **Milton**, 100; **Jacksonville**, 100; **Thomasville**, 150; **Allen**, 75; **Smithland**, 50.

RAY COUNTY.

This county is situated on the left bank of the Missouri River, bounded on the east by Carroll, north by Caldwell, and west by Clay County, and contains about 556 square miles. In 1860 there were 106,742 acres of land in cultivation, divided into 1600 farms, which possessed the following live stock of one year old and upward:—

Horses	8,324
Mules	1,580
Work Oxen	2,968
Cows	6,950
Other Cattle	18,565
Sheep	16,412
Hogs (all sizes)	45,500

This county was named in honor of John Ray, a member of the Convention to form the State Constitution. In 1821 it had a population of 1789; in 1830, 2657; in 1840, 6553; in 1850, 10,000; and in 1860, 14,076.

Physical Features.—There is a desirable division of prairie and timber in this county. The bottom lands of the Missouri are exceedingly fertile, but a portion of them are subject to inundation, in times of the highest freshets. They are well adapted to the culture of many agricultural products, and especially favorable for stock growing. The timber consists of the same varieties as the adjoining counties, except blue ash, white walnut, and sassafras, which we have not seen higher up the river than the eastern boundary of this county. The county is drained by Fishing River, Crooked River, and the "Wah-kan-dah," all of which have an abundance of fish. Two miles east from Millville is a sulphur spring, considered valuable for its medicinal properties. Stone coal is abundant in many parts of the county,

also excellent limestone for building purposes or manufacturing lime. Both saline and fresh water springs are numerous.

History.—The first settlements upon the territory now embraced in Ray County were made in 1816, by Isaac Martin, Abraham Linville, Isaac Wilson, John Turner, William Turnage, and others, on Crooked River, near the present site of "Buffalo City." At first these new settlers subsisted almost entirely upon game, but after they had raised crops they added roasted corn. When the corn became hard enough to grind, they made wooden mortars and pestles to "grind" it with. Their sieves were made by stretching a perforated deer-skin over a hoop. An improvement was made upon the mortar by the introduction of hand-mills, and in 1818 Isaac Martin erected one to run by horse power, the posts of which are still standing. In those days the Iowa and Sac Indians were numerous and friendly. Bears were plenty, and very troublesome in destroying corn and pumpkins. Deer, elk, turkeys, and smaller game were also very abundant. The first school taught in this region was by Meadow Vanderpool, in 1819, and the first goods were "cordelled" up the Missouri River by John Shields, and sold at Old Bluffton, near Camden. In 1819 the first steamboat navigated the Missouri River, and came up as high as Camden, and was a great curiosity to the natives, many of whom could not for a time be induced to approach within several hundred yards of it. (See Chapter on "Early Navigation of Western Rivers.")

The county business was formerly transacted at Old Bluffton, where the first court was held in April, 1821, by John Thornton, Isaac Martin, and Elisha Cameron as county-court justices; Wm. L. Smith, clerk; and John Harris, sheriff. The first court held at Richmond, the present seat of justice, was on the 5th of May, 1828, of which Wm. P. Thompson, Sebron J. Miller, and Isaac Martin were judges; George Woodward, clerk; and Larkin Stanley, sheriff. In 1827, John Wallard had a corn-field upon the ground now occupied by the present public square of Richmond. The courts continued to be held at Bluffton until 1828, when the county-seat was removed to Richmond. The only memorial that remains of this once important pioneer seat of justice is upon the county records, and in the memories of the early settlers of the State. The illustrious names that are interwoven with its seven years of judicial history sufficiently attest the importance of the former position of Bluffton; and although, as a town it has ceased to exist, the memory of its former history will be lasting. Hon. Hamilton R. Gamble was first circuit attorney, who, upon his resignation, was succeeded by Abiel Leonard

and Charles French. George Tompkins, Peyton R. Hayden, Cyrus Edwards, Gen. Duff Green, Jno. F. Ryland, and Amos Rees were acting attorneys at Bluffton at the above-mentioned date. For many of the foregoing items of early history we are indebted to Holland Vanderpool, Esq., a very worthy citizen of Ray County, whose father established the first school, and whose family have done much to bring the county to its present prosperous condition.

Industrial Pursuits.—Ray County is supplied with 22 merchants, 1 branch of Union Bank, 1 newspaper, 8 lawyers, 20 physicians, 3 druggists, 13 grocers, 1 silversmith, 2 tinners, 25 blacksmiths, 30 wagon-makers, 4 saddlers, 5 tailors, 8 shoemakers, 10 carpenters' shops, 2 tobacco manufacturers, 19 saw-mills, 12 flouring-mills, 6 coopers, etc.

Of Churches there are 18, embracing Methodist, Presbyterian, Reformers, Baptist, and Catholic. There are 67 school districts in the county, and 60 school-houses, with 4743 pupils and 77 teachers.

RICHMOND, the county-seat, was established about 1827. It is pleasantly situated south from the center of the county, about seven miles from the Missouri River, on high, undulating land, surrounded by an excellent and well-settled farming region, and has for many years been a place of considerable business, having had, in 1836, seven stores, and a number of mechanics' shops, etc., and now contains a bank, newspaper, several churches, and schools, and a population of about 1000.

Camden, the principal shipping point of the county, is on the Missouri River, seven miles from Richmond, and 125 above Jefferson City. It was first settled about 1833, and has taken the place of Old Bluffton, which was a short distance above, on the river, and whose glory has long since departed. Population about 500.

Millville is situated about twelve miles northeast from the county-seat, and contains 200 inhabitants.

Knoxville, in the north central part of the county, has a population of 200. Of other towns in the county there are **Albany, Elkhorn, Morton,** and **Tinney's Grove.** For post-offices, see full list in another chapter.

REYNOLDS COUNTY.

This county is situated in the southeastern part of the State, is bounded on the north by Iron and Dent, on the south by Carter and Shannon, on the east by Iron and Wayne, and on the west by Dent, Shannon, and Carter Counties.

Reynolds County was named in honor of Thomas Reynolds, a former Governor of the State, and in 1850 contained a population of 1849; in 1856, 2399; and in 1860, 3320.

The face of the country is rough and broken, and in some portions the scenery is wild and beautiful. The county is heavily timbered with forests of yellow pine, oak, hickory, etc. Some of the high table-lands are susceptible of cultivation, and the valleys and bottom lands are very productive. Many of the ridges, usually looked upon as worthless, would make very productive orchards or vineyards. The county is drained by Big Black River and its tributaries, East Fork, West Fork, Spring Creek, and Big Creek, some of which afford excellent water power for mills or iron manufactories.

Minerals.—Extensive deposits of hematite iron ore lie in a northeast and southwest course through townships 29, 30, and 31 of range 1 west, and 1 and 2 east, and lead ore has been found in several localities through the county. Limestone, clay for brick or stoneware, and some beds of granite are found in the county.

Churches and Schools.—The religious denominations in the county are principally Baptists, Methodists, and Presbyterians. There are a full share of district schools in the county, and several select schools of high standing.

CENTREVILLE, the county-seat, is in section 8, township 32, range 2 east, east of Middle Fork of Black River, and contains about 250 inhabitants, a Baptist church, a high school, 2 stores, 1 hotel, etc. The town was first settled in 1847, and the post-office established in 1852.

Lesterville, situated on the east side of Black River, has about 50 population.

Edge Hill, on the Middle Fork of Black River, 12 miles from Centreville, contains 2 Baptist churches, 1 blacksmith, 3 carpenters, 2 shoemakers, 1 tailor, 1 cabinetmaker, 2 stores, 1 sash and blind factory, and 1 flouring-mill. Population about 100.

Alamode, 10 miles from Centreville, contains about 50 inhabitants; and **Barnesville, Glen Dale, Thomasville**, and **Mungar's Hill** are all post villages.

RIPLEY COUNTY.

This county is situated in the south-southeast part of the State, bounded on the east by Butler, west by Oregon, north by Carter, (a new county,) and south by the Arkansas State line.

Physical Features.—The general surface of this county is undulating, and in some portions quite rough. It is traversed from north to south by the Current River, and also drained by Fourche and Mill Creeks, and other tributaries of the Current and Big Black Rivers. The uplands and ridges are timbered principally with yellow pine and red cedar, the former growing to an immense size. The bluffs along the Current are beautiful, and well adapted to fruit and grape culture. The best farming land lies in the valleys of the streams, but small grain and grasses will flourish upon many of the uplands. Besides pine and cedar above named, the county is timbered with oaks, elms, walnut, and hickory. Of minerals, there is an abundance of iron and lead ores, and indications of copper. It has rich mineral deposits waiting to be developed.

DONIPHAN is the county-seat, and the shipping point for the county. It is located on the Current River, twenty-four miles south and about twelve miles east from where J. H. Colton has it on his Township Map of Missouri. Population about 150.

The streams in the county are clear and rapid, and upon some of them there are excellent mill sites. Clear, cold springs are numerous in this county and in Carter.

Ripley County was first settled by Mr. Lemuel Kittrell, in 1819, who still resides here, and when he first came, his only associates were the Indians and wild beasts; but he hopes ere long, to see extensive iron and lead manufactories located upon the fine water power, and yet to greet the introduction of the locomotive by the continuation of the Cairo and Fulton Railroad, which is projected through the county. Population in 1840, 2856; in 1850, 2830; in 1856, 3834; and in 1860, 3700.

SALINE COUNTY.

This county is bounded on the southeast by Cooper, on the south by Pettis, west by Lafayette, and on the northwest, northeast, and east by the Missouri River, separating it from Chariton, Carroll, and Howard Counties. The distance from where the river strikes this county to where it leaves it at Arrow Rock is about ninety miles, and by an air-line between the two points, but thirty-two miles. The county, in 1840, contained 5258 inhabitants; in 1850, 8843; in 1856, 8214; and in 1860, 15,032.

Physical Features.—The surface of the county is undulating, and is about two-thirds prairie. The deficiency of timber is more than compensated by the extensive bed of cannel and bituminous coal that underlies most of the county, and is generally near the surface. Black River traverses the southern, and Salt Fork, one of its principal tributaries, the central portions of the county. Springs, both saline and fresh, are numerous, affording excellent water for all purposes, agricultural and mechanical. Limestone, sandstone, and lead ore are found throughout the county. No systematic mining done yet.

History.—Settlements were made upon the territory of this county as early as 1816, by persons from Virginia, Kentucky, and Tennessee. One of the most important products of the county in its earlier years was salt, large quantities of which were manufactured annually for a number of years, till at length it was imported at lower prices than it could be manufactured here; hence the works were entirely abandoned. As the name indicates, there are a number of very large salt springs in the county, with many of fresh water, which afford an abundance of stock water.

The Soil is exceedingly fertile, especially on the bottoms and the upland prairies. That portion known as the "Tetesaw Plains," is a tract of table-land, the elevation of which is between that of the bottoms and the highlands, and is one of the richest bodies of land in the State. It extends from "the pass" to the falls of Muddy Creek, a length of some nine miles, in one unbroken level. The soil is well adapted to the culture of hemp and tobacco, hence for most other products. Some farms yield per acre, of hemp, 1300 pounds; tobacco, 1200; corn, 100 bushels; wheat, 40 bushels; rye, 50 bushels; barley, 60; oats, 50; buckwheat, 40; potatoes, 300; turnips, 400; clover, 4 tons; timothy, 3 tons; Hungarian grass, 5 tons; with a

good return of apples, peaches, pears, etc. Unimproved lands are worth from $5 to $10.

Natural Advantages.—Nature seems to have been lavish with her gifts in the creation of this section of the State. The manufacturer and miner may each find here inducements such as they seldom meet with. While the farmer admires it for the fertility of the soil and the valuable springs, the miner and manufacturer will find beneath the same soil immense beds of stone coal, and rich veins of lead ore. There are also fine quarries of freestone and limestone convenient to most portions of the county. The timber is generally oak, hickory, and black walnut, which in some instances grow very large, affording from seventy to eighty feet of timber suitable for lumber or fencing rails. This county has an area of 750 square miles, and ninety miles of river border, affording an outlet to most of the county.

Industrial Pursuits.—There are in the county 2 newspapers, 1 bank, 7 lawyers, 25 doctors, 18 merchants, 8 grocers, 4 druggists, 2 silversmiths, 3 tinners, 20 blacksmiths, 6 wagon-makers, 6 saddlers, 8 tailors, 10 shoemakers, 2 cabinetmakers, 60 carpenters, 1 tobacconist, 4 coopers, 8 saw-mills, and 5 flouring-mills.

There are 28 church organizations, of various denominations, and about 50 district schools.

Capitalists, manufacturers, farmers, and mechanics will here find very superior natural advantages, and good openings for business.

MARSHALL, the county-seat, was laid off in 1838—is named in honor of Chief Justice Marshall, and has now a population of about 275. The location of the town is high and healthy, commanding an extensive view of the surrounding country.

Arrow Rock has a population of 700; **Cambridge**, 350; **Miami**, 600; **Brownsville**, 200; **Frankfort**, 250; and **Saline City** about 50.

SCHUYLER COUNTY.

This county is bounded on the north by the Iowa State line, and lies west of Scotland and Clarke Counties, which separate it from the Mississippi and Des Moines Rivers. This county was first settled in 1836 by David Floyd, Judge Samuel Eason, Jefferson Fulcher, John Davis, and Joseph Bradburn. Population in 1860, 6721. The surface of the country is generally undulating, and about one-third of it broken. It is all fertile, and susceptible of cultivation;

about two-thirds prairie, and the remainder timber land. The western border of the county is washed by Chariton River, upon which is some good water power, unimproved. Besides the smaller tributaries of the Chariton, the county is traversed by the three forks of the Fabius River and the north fork of Salt River. Most of the county is believed to be underlaid by a rich bed of coal; but only one or two banks have been opened yet.

The soil and climate are well adapted to the culture of most kinds of grains and grasses, yielding as follows: wheat, 20 bushels; corn, 80 bushels; rye, 25; oats, 40; buckwheat, 25; potatoes, 200; onions, 400; beets, 500; turnips, 200 bushels; hemp, 600 pounds; tobacco, 1000 pounds; timothy, 2 tons; and Hungarian grass, 3 tons per acre. Market is not very near now, and prices of produce are comparatively low; but the North Missouri Railroad, when completed, will pass through this county about the center, and the "State Line Railroad," now projected from Keokuk west to the Missouri, would pass along the northern border of the county, thus affording the farmer a good market at his very door. Unimproved lands are now worth from $2 to $4; improved, $6 to $10.

Church History.—The first Baptist church organized in this county was in the year 1838, at the house of David Floyd, in the southwest corner of the county, by the Rev. Mr. Hite. There are at present 9 Baptist churches, with a membership of 541. The present pastors of the church are Wm. Seamster, Lyons, and Simmons. The "Christian Order," organized their first church at the house of Daley Ruddles, one mile northeast from Lancaster, in 1845; Elder Turner, of Lewis County, was their first pastor. This denomination is now known as the "Lancaster Christian Church." They have a house of worship in Lancaster, costing $2000, and a membership of 160; entire membership in the county, 600. Present pastors, Elders Wm. Hartley, Isaac Foster, and —— Sanders. The M. E. Church, organized in 1838, which was before the division between the church North and South. This organization was effected under the preaching of Rev. Dr. Still and William Rush; number of communicants, 350. The M. E. Church South, has 240 members. Their organization took place after their division in 1845; preacher in charge J. R. Alderman. Old Side Baptists, 2 congregations and 100 members; Moravians or United Brethern, 2 congregations and 100 members; Southern Church, 1 congregation and 50 members; Catholics, about 10; Universalists, 50—no churches. We are indebted for the foregoing facts, and many others in regard to this county, to John McGoldrick, Esq., of Lancaster.

Schools.—The county is divided into 52 districts, and, according to the last report, there were 40 school-houses, and 3549 children between 5 and 20, of whom 1626 were taught during the year. The public schools are kept open from 3 to 9 months annually, depending upon the amount of public funds. The apportionment for 1859 was $2205 24. A female seminary was established in 1857, and is under the charge of Mrs. A. P. Baird; has about 100 pupils. Lancaster Seminary, incorporated in 1859, Messrs. J. W. Minor, Reuben Whitwell, E. M. Bradley, R. Caywood, Wm. Buford, Dr. R. J. Christie, J. B. Arlverson, Wm. S. Thatcher, and Wm. V. Rippey, corporators.

There is in the county 1 newspaper, 6 lawyers, 9 physicians, 8 merchants, 2 grocers, 1 druggist, 1 silversmith, 3 tinners, 15 blacksmiths, 3 wagon-makers, 1 tailor, 7 shoemakers, 3 cabinetmakers, 20 carpenters, 1 tobacco manufactory, (doing a good business,) 9 steam and 1 water saw-mills, 6 steam flouring-mills, 4 coopers, and 3 hotels.

LANCASTER, the county-seat, has a population of 800; and **Greentop**, 125. Distance from Lancaster to Canton, on the Mississippi River, 70 miles; to Alexandria, 67 miles; to Hudson, on the Hannibal and St. Joseph Railroad, 55 miles; to Jefferson City, 180 miles.

Ikerman, Cherry Grove, Pedee, and **Tippecanoe** are flourishing villages.

SCOTLAND COUNTY.

This county is situated in the north-northeast part of the State, bordering on the Iowa line, separated from the Mississippi and Des Moines Rivers by Clarke County on the east, and bounded on the west by Schuyler, and on the south by Knox Counties. Scotland County in 1850 contained 3785 inhabitants; in 1856, 7535; and in 1860, 9351.

Physical Features.—The surface of the county is undulating, and consists principally of prairies. It is drained by the Waconda, North Fabius, and Middle Fabius Rivers, and several smaller streams tributary to them. The timber is mostly oak, hickory, walnut, elm, etc.

The **Soil** is generally fertile, and well adapted to farming or grazing purposes. Cultivated land is worth from $10 to $20; and uncultivated, $3 to $8.

MEMPHIS, the county-seat, is situated on the North Fabius, near the center of the county, and was first settled in 1838. It contains

1 high school, 1 Christian, and 1 Presbyterian Church, a Masonic and an Odd Fellows' Lodge, a newspaper printing-office, 2 flouring-mills, 8 stores, 3 hotels, 1 saw-mill, a manufactory for each, shingles, sash, blinds, and rope, etc., with a full representation of other kinds of business houses. Population about 400.

Middle Fabius (sometimes called "Greasy") is situated on the Middle Fabius River, nine miles from the county-seat, contains 1 seminary, 1 Baptist, and 1 Presbyterian church, 2 flouring-mills, 1 foundery and machine shop, 1 steam saw-mill, 1 sash, blind, and door manufactory, 2 hotels, etc. Other industrial pursuits are well represented. Population 125.

Etna is a new town, laid out in 1855 by A. Hunt, situated eleven miles from Memphis, and contains a population of 120.

Sand Hill and **Arabella** are small villages.

Upton is a new town on the projected line of the Iowa and Missouri State Line Railroad, and thirteen miles from Memphis. It contains a Methodist and a Christian church, flouring-mill, 2 hotels, and a variety of other business houses. Population about 450.

SCOTT COUNTY.

This county is situated in the southeast part of the State, bounded on the east by the Mississippi River, west by Stoddard, north by Cape Girardeau, and south by New Madrid and Mississippi Counties. Scott County was erected from New Madrid in 1822, and named in honor of General Winfield Scott. Its population in 1830 was 2136; in 1840, 5974; in 1850, 3182, (decrease of 2792;) and in 1856, 2792. [It is remarkable that the total population in 1856 should be precisely the same as the decrease from 1840 to 1850; but it is so given by the State census returns.] Its population in 1860, was 5247.

Physical Features.—In the northern and western parts of the county the surface is broken and uneven, and many of the highlands are ridges underlaid with the same limestone that is so abundant at Cape Girardeau. The soil on the uplands is generally inclined to be sterile, while that of the valleys, prairies, and bottoms are exceedingly fertile. The southern portion is covered with extensive cypress swamps, and where susceptible of cultivation is very rich, and produces bountiful crops of corn, oats, tobacco, and vegetables and grass. Some as fine vegetables as are grown in the State were produced in this county.

BENTON, the county-seat, is situated about three miles north from the center of the county, and six miles west of the Mississippi.

Commerce, the principal town in the county, is on the Mississippi River, eight miles from the county-seat, was incorporated January 15, 1857, and contains 1 M. E. Church, 1 flouring-mill, 1 tannery, 1 hotel, 1 pottery, 6 stores, and several mechanic's shops. Population about 350.

Pleasant Plains is a village situated upon the point of the dividing ridge that separates Lakes St. John and St. Mary. The same character of land extends between these bodies of water, south to the town of New Madrid.

SHANNON COUNTY.

This county is situated in the south-southeast part of the State, bounded on the east by Reynolds and Carter, on the west by Texas, on the north by Dent and Reynolds, and on the south by Oregon and Carter Counties. The first settlements were made here in 1819; yet there are now (1860) but 1978 inhabitants.

The **Physical Features** of the county are similar to those of Reynolds County—generally broken and well timbered. The greater portion of the soil is well adapted to fruit and grape culture, and also to the production of grasses and cereals. The valleys are generally fertile. The county is traversed in a southeasterly direction by Current River, (an affluent of Black River,) and by their numerous tributaries. The Current is a rapid stream, affording an abundance of water power which could be improved to good advantage.

Most of the land was entered in 1858–59, at 12½ cents per acre; previous to which time but few entries were made except of the copper lands. Seven townships were reserved by government as "copper lands," and of these 140,000 acres are still (January, 1860) subject to entry at $1 25 per acre. But few farms are opened yet; corn, wheat, rye, and oats are the most profitable crops. Some portions of this county have generally been looked upon as unproductive, yet some farms opened have produced per acre: wheat, 30 bushels; rye, 30; oats, 30; potatoes, 150; turnips, 200; tobacco, 1000 pounds; and an abundant crop of apples and peaches; and some of the old settlers in this and other portions of the State seem disposed to complain because they have lived in certain localities so long, endured so many

privations, and met with such ill success. In this county there are settlements 25 to 30 years old, that have not a fruit tree nor a grape vine on the whole place; while there is no better soil or climate for fruit or grapes in the Union probably, and no more certain or profitable crop; and ten dollars' worth of fruit trees and vines planted 20 years ago and properly cultivated, would now be worth as many hundreds.

Minerals.—This county is very rich in minerals; containing immense deposits of hematite iron ore, lead ore, and very extensive beds of copper of a superior quality, in townships 28 and 29, ranges 34 and 35 west. Some of these mines will be opened and worked to great profit at an early day. Some gold has been discovered in this county in hornblende and quartz rock, associated with magnetic iron ores; as yet it is entirely undeveloped.

EMINENCE, the seat of justice, is a brisk town, situated a little above the center of the county on Current River, and is surrounded by a good agricultural country.

SHELBY COUNTY.

This county is situated in the east-northeast part of the State, and is drained by Salt River, South Fabius, and North Rivers, affluents of the Mississippi. Population in 1860, 7718. The first settlement made here was by Major O. Dickerson (who was also the first settler in Palmyra, Marion County). This county was organized in 1836, from territory taken off from Marion County. The county-seat was for a time at Oakdale. The general surface of the country is rolling or undulating, with about an equal division of prairie and timber land, which is generally very fertile, producing large crops of all the grasses, grains, vegetables, and fruits adapted to this latitude. Stone coal and building stone are abundant; but only taken out for local purposes.

There are in the county, lawyers, 7; physicians, 20; merchants, 20; grocers, 9; druggists, 3; silversmith, 1; tinner, 1; blacksmiths, 9; wagon-makers, 3; saddlers, 2; tailors, 4; shoemakers, 6; cabinet-makers, 2; carpenters, 10; coopers, 2; saw-mills, 6; flouring-mills, 4.

Churches.—There are 5 churches in the county: O. S. Presbyterian, organized 1859, Rev. Mr. Cochran, pastor, 14 members; M. E., organized 1836, Rev. J. Dries and Rev. Mr. Hudson, pas-

tors, 700 members; Baptist, organized 1845, Rev. J. Tilford, pastor, 50 members; O. S. Baptist, organized 1840, Rev. H. Louthan, pastor, 30 members; Christian Church, organized 1838, Rev. Elder Hatchett, pastor, 290 members.

Schools.—There are 3 high schools in the county: Shelbyville Academy, M. E. Institution, under charge of Rev. Mr. Dries, and the Shelby Male and Female Seminary in charge of H. Ellis; also a private school near Clarence Station, on the Hannibal and St. Joseph Railroad, taught by Rev. Mr. Corbin. There are some 30 district schools, with a total average attendance of 1200 scholars.

Good farming lands can be had, with some improvements, at from $8 to $25 per acre; and unimproved lands, at from $5 to $10. Farmers will here find a good location, and a sure reward for their enterprise and industry.

SHELBYVILLE, the county-seat, is 7 miles from the railroad and 110 from Jefferson City, very pleasantly situated in the center of a rich agricultural district. It has a population of some 800.

Bethel, situated on North River, 5 miles from the county-seat, contains about 400 inhabitants; **Shelbina**, 150; **Hunnewell**, 100; **Lakenan**, 50; **Clarence**, 50. The last-named four are stations on the Hannibal and St. Joseph Railroad.

ST. CHARLES COUNTY.

This county is situated in the eastern part of the State, occupying a narrow neck of land lying between the Mississippi and Missouri Rivers opposite the mouth of the Illinois. It is bounded on the north by the Missouri River and Lincoln County, on the west by Warren County, and on the south by the Missouri River, which separates it from St. Louis and Franklin Counties. Population in 1860, 14,370 whites and 2186 slaves.

Physical Features.—Two of the largest streams in America wash the shores of this county—the Mississippi on the north and east, and the Missouri on the southward: by the former stream, products are borne on steamers from the extreme northern part of the United States to the southward; by the latter, furs are brought down from the extreme northwest, and regular steamboat navigation is established to points on the Upper Missouri, 3526 miles from St. Louis.

The dividing land between the two rivers is rolling, and in some

places broken into ridges. The long point or tongue of land, for twenty miles above the mouth of the Missouri, is entirely alluvial, and varies from two to ten miles in width. The highlands terminate at a point three miles below the City of St. Charles, in a most beautiful and romantic pile, called the "Mamelles."* Here the line of bluffs on the Mississippi meets the line of bluffs on the Missouri, and it is evident that at this point these two mighty rivers once united their waters; but by the long-continued deposits of alluvial soil, a rich peninsula has been formed, and each river has been driven to the opposite bluff; the Missouri to the "Charbonnier" bluff in St. Louis County, and the Mississippi to the base of the lofty bluffs in Illinois; and one of the richest portions of bottom-lands to be found anywhere exists between them. This peninsula is partly prairie and partly heavily timbered, and through the center of it runs the former bed of the two rivers, now forming a long crooked marsh, called the **Marias Croche.** From the "Mamelles" a line of rugged bluffs extends up the Missouri through the county, sometimes approaching near the river, but generally leaving a very fertile heavily timbered bottom of from one to four miles in width. A similar range of bluffs extend up the Mississippi, leaving a wide, fertile bottom, principally prairie, portions of which are occasionally overflown by high water. The central part of the county lies between these bluffs, and is alternately hilly, rolling, and level, having about equal portions of timbered land and prairie, intersected with creeks, and containing numerous fine clear springs, which, with the five important creeks traversing this county, afford abundance of water for stock, and a few mill-sites. There will be no lack of timber in this county for many years to come.

Soil and Productions.—The land is in many places first rate, in others second rate, and in some places poor ridges are to be found extending some distance. The soil in the point and upon the river bottoms is of the richest possible description, and the uplands are of good quality, embracing a large proportion of soil admirably adapted to the cultivation of wheat, corn, hemp, and tobacco, and the vegetables, fruit, and most other crops that flourish in this latitude. (Also see Warren County.)

Good water power is afforded by the Perugue, Dardenne, and

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* "The prospect from the Mamelles (the breasts) is believed by many to be the most romantic and beautiful in the United States. It presents an imposing view of the course of the Missouri and the Mississippi Rivers—with their bluffs and towering cliffs; their ancient meandering beds; the Marias Croche lake; the mouth of the Illinois River; and of the vast prairie with farms and farm-scenes interspersed."—*Flint.*

Femme Osage Creeks, but at present there is but one on each—all grist-mills. There are twenty mills in the county—five water and fifteen steam power. Of these, five are in the city, one on Big Creek, three on Perugue, three on Dardenne, one on the Mississippi, two in Augusta, and others through the country. Two large brick woolen factories, valued at $90,000, running 1300 spindles, are in successful operation.

Minerals.—Limestone for building purposes is abundant throughout the county; and near the City of St. Charles, and in some other portions, sandstone, easily quarried, has been found in large quantities, and advantageously worked. Numerous beds of bituminous coal have been opened and worked to some extent, but no systematic mining done, further than for present consumption. Potter's clay of a good quality exists in the county, but has never been worked, except to a very limited extent. It is reported that a fine-grained marble also exists in the county, and in former years a considerable quantity of good "Spanish Brown" was prepared from a deposit in this county.

ST. CHARLES, the county-seat, has a high, commanding, healthy location, eligible for commercial or manufacturing purposes. It is upon the first point of firm, elevated land, above the mouth of the Missouri River, and has a beautiful rocky shore. It is now, and must continue to be the principal crossing-place of the Missouri River, for all trade and travel passing between St. Louis and the northern and northeastern parts of the State. Hence the wisdom shown by the North Missouri Railroad Company, and the people of St. Charles County, in deciding to erect a bridge at this point of the most substantial and enduring character—which shall serve for the railroad trains, for teams, and for foot-passengers. This will be the first bridge across the Missouri River, and having a draw, will in nowise interfere with steamboat navigation. The prospects for the City of St. Charles are very promising. Situated so near to the great commercial metropolis of the west, when this bridge is completed, many citizens of St. Louis will here build fine residences, and being upon the great North and South line of Railroad, at no distant day to connect with the network of Railroads in Iowa and Minnesota, with a main line extending to St. Paul, this must ever be an important business point, and presents rare inducements to manufacturers particularly.

History.—St. Charles County formerly embraced all the country between the Mississippi and the Missouri—stretching to an indefinite extent to the north and west; but by the formation of new counties, one after another, it has been reduced to its present moderate limits. Nearly all the events of the early settlement of the State are intimately connected with the history of this county. The Indian wars,

massacres, and adventures that attended the early settlement of the State, and accompanied the late war, happened principally in St. Charles County. Here the rangers were raised, the forts built, severe battles fought, and here it was that Black Hawk made his first war against the white population. The first settlement in what is now St. Charles County—indeed in the northern part of Missouri—was at "Village du Cote," now St. Charles, in 1762—two years before St. Louis was founded by Laclede.

ST. CLAIR COUNTY.

This county is situated in the west-southwest part of the State, separated from the Kansas State line by Vernon and Bates Counties. In 1850—the first census taken—showed a population of 3556, which had increased to 6256 in 1860.

Physical Features.—The face of the country is undulating—neither level nor broken. There is from one-quarter to one-third timber—the remainder prairie. The timber consists of hickory, oaks, walnut, linn, etc. The prairies lie principally in the northern part of the county, while the southern—south of the Osage River—is timbered, and more broken. The southern portion is also well watered, by the numerous tributaries of the Osage River, some of which afford excellent water-power.

Soil and Productions.—The soil is generally very fertile, and well adapted to all farming purposes. Some farms have yielded of hemp 700 pounds to the acre; tobacco 1600; flax 2000 in the straw; wheat 35 bushels; corn 75 bushels; rye 40; oats 45; barley 30; potatoes 250; onions, beets, and carrots, each 300; timothy 8000; clover 2000 lbs.; Hungarian grass 8000 lbs. to the acre, etc. This county is well adapted to stock growing, as all kinds of grasses grow finely. Woolen manufactories, tanneries, saw and grist mills, will do well here. This is one of the counties that was almost depopulated by the war, and it is now "open for settlement." Farms can be purchased at reasonable figures, and there is room for all classes of business.

Minerals.—Both iron and coal have been found in this county, but neither worked to any extent. There is without doubt a thick strata of coal underlying most of the county, sufficient to supply all demands for fuel, for centuries to come.

In the spring of 1865 there were 10,000 acres of land subject to entry, at $1.25 per acre, or to settlement under the Homestead law.

Since the close of the war this and adjoining counties have received an immense influx of population—principally energetic intelligent people from the Eastern and Northern States, and many towns, almost destroyed during the war, are now in better condition than ever before.

ST. FRANCOIS COUNTY.

This county is situated in the east-southeast part of the State, has an area of about 350 square miles, and is separated from the Mississippi River by Ste. Genevieve County.

Physical Features.—The face of the country is broken and hilly—less than one-tenth being bottom land, and about four-fifths tillable. It is drained by Big River, Terre Beau, Flat Creek, and the small tributaries or sources of the St. François River, some of which are beautiful, clear cold streams, and afford numerous sites for water power. The timber consists of the various kinds found in the adjoining counties, with the addition of some considerable forests of pine.

The **Soil** is moderately fertile, however, there is a good proportion of excellent farming land, principally in the valleys, and some fine old farms have been cultivated forty or fifty years. This being principally a mining region, whatever the farmer may produce will find a ready market, at good prices, at his very door. This remark will apply to all counties where mining is prosecuted with system and regularity. The soil and climate is well adapted for orchards and vineyards, and if properly used for these purposes, the now vacant so-called "flint ridges" may prove more valuable, and return a greater profit upon the money and labor expended than the best farms in the county. Sheep raising should be extensively engaged in, and woolen factories established upon some of the many excellent water-power sites in the county.

Minerals.—A considerable part of that wonder in the mineral wealth of Missouri, the Iron Mountain, lies in this county. (See description, page 141.) There are several extensive lead mines in the county—the principal ones thus far developed being in T. 38 N., R. 5 E. Here are the "mines of Bisch, of Perry, and of Vallé, the last two of which are more generally known than any other lead mines in Missouri; not only on account of the length of time during which mining has been carried on, but also by the large amount of ore which has been obtained." Some of these mines were worked with consider-

able system and regularity from 1824 till the beginning of the war, but the only data we have, shows the amount of lead produced from 1839 to 1854 inclusive, during which period the yield of lead from these three mines amounted to 40,803,000 lbs. Copper, cobalt, nickel, and some other minerals are reported to have been discovered, but no explorations have been made.

A railroad is projected to run from Tunnel Station, on Iron Mountain Railroad, through Farmington, the county-seat, thence to mine La Motte, and to the river at Cape Girardeau. The completion of this road will furnish an outlet from these mines, and this whole county, either direct to St. Louis or to the Mississippi, by railroad—hence the sooner it is built, the sooner will the resources of the county be developed.

The "Cook Settlement" is one of the best neighborhoods, and located upon the most extensive and most thoroughly cultivated tracts of land in Southeast Missouri. Capital and enterprise are needed to establish manufactories, and to develop the mineral, and other resources.

STE. GENEVIEVE COUNTY.

This county is situated on the Mississippi River, in the E. S. E. part of the State, and has an area of about 400 square miles.

Physical Features.—The surface is hilly and broken, except some extensive tracts of bottom land along the Mississippi, which are well timbered, principally ash, maple, walnut, sycamore, cotton, and hackberry. The timber of the uplands is generally hickory and oaks.

Early History.—The first settlements in this county were made about 1755. M. Laclede arrived at Ste. Genevieve and Fort Chartres, Nov. 3, 1763. Manuel Perez was Lieut.-Governor, and Henry Peyroux commandant of the district in 1788. Francis Valle, Senior, settled and erected a number of buildings on the Saline River in 1797. Francis Valle, Jr., built a water-mill and a cabin on the River Aux Vases in the fall of 1802; built dwellings in 1796. James Maxwell was vicar-general of the late province of Louisiana, over the English and American settlers, and was by letter from Bishop of Orleans, dated May 1, 1799, notified that he, the Bishop, had recommended him to the King, and requesting him to give his attention to the whole clergy of the province, to convert all immigrants to the Roman Catholic religion. Anthony and Joseph Vallars (minors) settled on Big River,

Ste. Genevieve District, under concession dated Oct. 11, 1799. Their father was captain in the Spanish service for thirty years, and also civil commandant at Ste. Genevieve and Arkansas for several years. Settlements were made by John Baptiste Valle, Jr., in 1799, by Marie Louisa Valle Villars, on the River Saline, 18th February, 1798, by John Baptiste Valle, on River Establishment, July 4, 1796. In 1810 the town contained twenty large stores, "*from which the people of St. Louis laid in their stocks.*" It required four months to go to Philadelphia and return, and freights to Pittsburg were $10 per 100 lbs. Goods were then wagoned to Pittsburg, and brought in flat or keel boats down the Ohio and up the Mississippi River.

Minerals.—The principal source of wealth in this county are its minerals, copper, lead, iron, salt, zinc, marble, sand, etc. Until recently, but little has been done toward the development of these mineral resources. But it is reported that the extensive quarry of excellent variegated marble is soon to be worked; that companies are already preparing to manufacture salt; that smelting furnaces for copper and lead are being erected, new mines being discovered, and old ones worked deeper than ever, and paying very well. The white sand so abundant here is second to none, probably, anywhere—almost pure silex—and large quantities have been regularly shipped to Pittsburg, Wheeling, and even to Boston, for the manufacture of flint glass. Situated opposite an exhaustless supply of excellent coal, capitalists and manufacturers will not be very slow to see the propriety *and profit* of establishing manufactories of various kinds at Ste. Genevieve. As early as 1834–35, A. Valle wrote as follows: "I received 10,000 lbs. red copper, which I sold in New York, and have been informed it was of an excellent quality; the copper ore is abundant, and yields a good per cent. Our lead mines are pronounced by English and German miners richer, easier worked, and at less expense, than the famed mines of Galena. I ship annually from this place three million pounds of lead. The iron ore is the most abundant of our minerals. The first French settlers made salt four miles from this place (Ste. Genevieve), in considerable quantities. The water is strong, and good for the manufacture of salt." The quarry or ridge of white and variegated marble is represented as being as handsome as the Italian, and the ridge or quarry has been traced for miles.

Soil and Products.—The uplands are well adapted to wheat and all kinds of fruit, and of late years considerable attention is being devoted to the latter. Over 250,000 bearing grapevines now in vineyards here. The land along the Mississippi, and in the valleys along the

interior water-courses, is very rich, and well adapted for all farming purposes.

Natural Advantages.—The people of this county are now (1867) urging the importance of building a railroad from their county-seat to the Iron Mountain. The chairman of the committee on organization thus sums up the advantages of the county:

"As if the people of Ste. Genevieve County, Missouri, were designed to be the favorites of fortune, we have on the west side of the Mississippi, varying in distance from five to thirty-five miles from the river, inexhaustible deposits of the best iron ore in the world. A wide belt of the best glass sand, near the river, extending across Ste. Genevieve County, from north to south. 'The best salt springs in the Union,' on the banks of the Mississippi River and the Saline Creek, in Ste. Genevieve County, the best white lime in the State, best grindstones, superior building materials, marble, freestone, etc., etc., while farther west, the great mineral belt, from north to south, passes through the entire county, described by a line from Valle's mines to Mine La Motte, the intermediate space being dotted along by well-known discoveries of lead ore, such as the McCormac mines, Lincoln mines, and Mine Avon. Mine La Motte, with its untold wealth of copper, lead, cobalt, and nickel, must always find its most convenient access to market through Ste. Genevieve County.

"On the east side of the Mississippi River, in Randolph County, Illinois, is located an immense field of superior stone coal, penetrated by the Kaskaskia River, and capable of furnishing a supply, equivalent to any demand, for ages to come. There is no portion of the Union where natural resources are more abundant than in this portion of Missouri and Illinois, and where all the elements of greatness and power are aggregated on so small an area. But let us not forget the superior wheat of Ste. Genevieve County, the adaptability of our soil for clover, timothy meadows, and our delightful evergreen blue grass, indigenous to our soil; our fine country for every description of fruit, in a climate where it never perishes on account of the severity of the weather; our natural springs of pure water; our salubrious climate; our delightful rural districts, diversified by meadows, waving grain, green grass plats, and rippling rills, all added together, make up an aggregate of the good things of this world unsurpassed by any other portion of the United States."

ST. LOUIS COUNTY.

This county occupies a point of land formed by the confluence of the Missouri with the Mississippi River—the former washing its northern and the latter its eastern border. The county is drained by the Maramec River, which traverses the southern portion and enters the Mississippi on the county boundary; also by the River Des Peres, and by Bonhomme and Gravois Creeks. The surface is pleasantly diversified, the soil generally productive, underlaid by limestone, extensively used for building purposes. A considerable portion of the county is underlaid by coal, but a few banks have been opened. A fine quality of building-stone, by some called "marble," is abundant and extensively used.

This is naturally one of the best farming counties in the State, containing a large proportion of first-rate land; consisting in part of the alluvial lands, extending from St. Louis along the margin of the Mississippi to the mouth of the Missouri, thence up that river to Belle Fontain. The valley of Florisant is also very rich and in a high state of cultivation. The valley of Riviere des Peres, west and southwest of the city, and the undulating tracts westward from the city to the Missouri, are very fertile, and well settled.

THE CITY OF ST. LOUIS is situated twenty miles below the mouth of the Missouri River; 174 above the mouth of the Ohio River; 744 below the Falls of St. Anthony; 1194 above New Orleans, and 128 miles east from Jefferson City, the State Capital. Lat. 38° 37′ 28″ N., lon. 90° 15′ 16″ W. The length of the city, by the course of the river, is about nine miles, extending four miles back; but the thickly settled portion is about seven miles in length, by three and a half in breadth;—is regularly laid out, the streets generally being 60 feet wide, and crossing each other at right angles. The buildings, both public and private, are generally of the most substantial character, being of stone, marble, and brick. There is probably no city in the Union of its size, that can boast a better class of public buildings. The two leading hotels, in point of size, architectural beauty, magnificence of interior finish, or convenience and completeness of detail, are probably unsurpassed in the United States. The Lindell Hotel, on Washington Avenue, was opened in the fall of 1864, and the Southern, corner of Fourth and Walnut Streets, in the fall of 1865. That the reader may form some idea of the "Lindell," a few statistics are

given: Total cost of hotel and lot, $1,676,400; total floorage, 7 acres; area of plate glass, 1 acre; length of gas pipe, 3 miles; length of carpeting, 18 miles; area of plastering, 27 acres; length of bell wire, 32 miles; height from sidewalk, 112 feet. The Southern Hotel is not so large as the Lindell, but in some respects more elegant, and cost $1,250,000. Of other hotels, there are the Planter's, Barnum's, St. Nicholas, Olive Street, Everett, Broadway, etc., numbering 34. There are 93 churches (17 of which were erected in 1866), 1 normal school, 1 high school, and 30 public, and 54 private schools, 3 commercial colleges, 4 universities, 4 medical colleges, 10 female seminaries, 4 academies, a mercantile library with upwards of 30,000 volumes, a public school library with 12,000 volumes, a polytechnic institute (affording gratuitous instruction to all industrious mechanics, artisans, and apprentices), with a full quota of asylums, benevolent societies, etc.

Early History.—The history of St. Louis, if given in detail, would fill a good-sized volume. A few notes are given below, furnished by John Reynolds, an early settler. As stated in the "Historical Epochs" in this work, an enterprising and talented merchant, Pierre Auguste Laclede, from New Orleans, on the 15th of February, 1764, laid the foundation for this famous city, and erected some wooden huts near the present old Market Square. St. Louis was founded on commerce, and that branch of industry has been its main support in its unparalleled growth to the present time.

The great article of commerce in the early settlement of St. Louis was the Indian trade in their peltries and furs. Lead from the Indians and also from the whites formed a considerable item in the pioneer commerce of St. Louis. Some considerable quantity of wild game, deer, buffaloes, and bears, was shipped in the early times from St. Louis to New Orleans. Surplus wheat and flour, raised in the American Bottom, Illinois, added somewhat to the commerce, at that period.

In early times the Missouri River furnished more furs and peltries to St. Louis than it received from all other sources. Before St. Louis was founded, hunters and trappers visited the Missouri River, far up toward the Rocky Mountains. The Indian trade from St. Louis was also extended to the sources of the Mississippi and far up the St. Peters River.

The Indian goods received at St. Louis about this time amounted annually to about $35,000. The furs and peltries were generally shipped to Canada, thence to Europe, and it required four years to make the returns. Toward the close of the last century, the annual outfits

of Indian goods for the Missouri River increased to about $61,000. It was not uncommon to ascend the Missouri River in those times upwards of 1000 miles, in the prosecution of the Indian trade. Companies were formed to enter fully into this commerce, as individual enterprise could not so well accomplish it.

An Irish gentleman, Dr. Andrew Todd, was authorized by the Spanish government to prosecute an exclusive trade on the Missouri River with the Indians, and he located himself in St. Louis, about the year 1790. In 1792 several French and Spanish traders were equipped by Todd to trade high up on the Missouri River.

For fifteen years previous to 1804, the average value annually of the furs and peltries received in St. Louis was $203,750. The annual average number of deer skins was 150,000; beaver furs, 369,000 lbs.; otter, 8000 lbs.; bear skins, 5100, and buffalo robes only 850.

The French traders from St. Louis had occupied the country east of the Rocky Mountains before the year 1804, when Messrs. Lewis and Clark explored that country in their expedition to the Pacific Ocean. M. Soiziel, sustained by Mr. August Chouteau, established a fort and trading house on an island in the Missouri River, near the Great Bend, and rendered good service to Lewis and Clark in their expedition to the ocean.

In 1808 the Missouri Fur Company was formed, and was composed of Emanuel Siza, P. Chouteau and others of St. Louis, and Wm. Morrison and Pierre Merald of Kaskaskia, Illinois. The capital was $40,000, and Major Andrew Henry, the father of General James D. Henry, who became so conspicuous in the Black Hawk war in Illinois, in 1832, was the main agent and manager of the Company in their operations toward the Rocky Mountains.

This company formed the two trading houses on the west side of the Rocky Mountains; one on the Columbia River, and the other on Lewis River.

John Jacob Astor & Company in 1809, before and after their expedition to the Pacific Ocean, made St. Louis a resting point, which would almost entitle it to the honor of the enterprise. And in 1819 he established a commercial house in St. Louis, for the Indian trade of the Missouri River, under the charge of Samuel Abbott. The early great wealth of Mr. Astor rested mainly on the house in St. Louis for its existence.

In 1812 the Missouri Fur Company was dissolved, and private individuals, such as B. Pratt, P. Chouteau, J. P. Cabanne and E. Siza, entered into the Missouri traffic with the Indians.

About this time, 1819, another fur company was organized, and

the members were Joshua Pilcher, Emanuel Siza, Thomas Hempstead, and Capt. Perkins. This company was intended for the Rocky Mountain trade, but did not succeed as well as those composed of Frenchmen.

In 1823 Gen. Ashley entered from St. Louis into the Indian trade of the Rocky Mountains, and continued in it for several years. In a battle with the Cherokee Indians, he lost fourteen men killed and ten wounded. He discovered the famous "South Pass" to the Pacific, and made a large fortune in the trade. To a fort he erected in the mountains, Gen. Ashley conveyed a six-pound cannon, 1200 miles, and afterward several wagons were driven across the plains to the fort in 1828. Gen. Ashley sold out his furs for $180,000 and retired from the trade. Messrs. Smith, Jackson and Sublett were the principal purchasers of Gen. Ashley, and entered into a company for the Indian trade and trapping on the Rocky Mountains.

In the time of Gen. Ashley two-fifths of the men perished in the trade, and I know the French population suffered greatly in this commerce. The white bears devoured many of the hunters and trappers; also many were drowned. The energy and ambition of the young men to encounter danger, and even death itself, is surprising. This commerce enriched St. Louis, but it diminished greatly the ranks of the hardy and enterprising population of the West.

The French villages and other settlements around St. Louis furnished articles of commerce in early times to it. Carondelet, or Vide Pouche, as it was first called, was settled in 1767, but furnished very little for trade, only the invention to arrange a cart load of wood exceedingly narrow with large side surfaces for show. St. Charles and St. Ferdinand villages were established in early times, and added some to the St. Louis commerce.

In these early times the almost entire language spoken in St. Louis was the French, and not many of the French masses could speak English. The leading and conspicuous inhabitants were French, and most of the business was done by them. The farmers and boatmen were generally Frenchmen, and agriculture and navigation were conducted on the French systems.

The inhabitants of St. Louis in olden times cultivated a large common field west of the village. This field mostly supplied them with wheat and corn for bread. The range was then exceedingly good, and the stock was numerous. The fur and Indian trade was carried on from this town on almost all the western waters, and more support and wealth were realized from this commerce than any other. The lead trade also added to the wealth of St. Louis.

History.—In the year 1807 St. Louis presented the appearance of a French village, as much as if it were located in France. Nothing in or about it wore the aspect or appearance that it was within the limits of the United States. The inhabitants spoke French entirely, and observed all the manners and customs of the mother country, France. The dress of the people, male and female, was foreign to an American. The voyageurs, *Couvieurs du Bois*, and the farmers, scarcely ever wore a hat, but tied around their heads a blue cotton handkerchief. The white blanket-coat was the general wear in winter, and in summer, a cotton white shirt, or red woolen one, was about all the garments the masses wore, except pantaloons of buckskin in the winter and colored cotton in the summer. In the cold weather the masses generally wore moccasins on their feet, and in summer, they used the same or their bare feet. It was common for the males to wear a belt around them winter and summer, wherein was fastened a pouch, generally made of seal-skin with the hair on, containing tobacco, a pipe, flint and steel; so that they could enjoy this genial luxury, at any time or place, of smoking. This habit was almost universal in olden times, with the French male population of all the villages. In the belt was also suspended a butcher-knife, and often a small hatchet. Thus equipped, a Frenchman, with a clay pipe in his mouth, was prepared for the Rocky Mountains, or a hunt in the neighborhood for raccoons and opossums.

The merchants and the upper classes dressed genteelly, and deported themselves with the manners and urbanity of polished gentlemen.

The females of all classes were always dressed with taste and neatness. They did not labor in the fields, or much anywhere else to injure their personal appearance, and they paid much attention to the display of their beauty, and the charms which nature has bestowed on a lovely and beautiful female. All the gayety and beauty of the female creoles were sustained and added to, in a tenfold degree, by that innocence, virtue, and chastity which were so signally observed by this class of people in pioneer times.

The dwellings were French, constructed *a la mode a France*, and the barns stood thick on the present Third Street, in the City of St. Louis. These barns were thatched with straw, and constructed for the most part with cedar posts planted in the earth; the intervals between the posts were filled up with puncheons of split cottonwood. In these barns were stored away the wheat the common field had produced, and at times, hay cut in the prairie was also housed in them.

Small round towers, constructed of sods, extended quite around the town. These towers were the remains of the ancient fortifications

erected in Spanish times, to defend it against the Indian and English depredations. Near the intersection of Walnut and Fourth Streets stood a tower, and a bastion was erected in the northwest section of the ancient town, not far off from an extension of Third Street of the city.

At that early day a bluff of perpendicular rocks, twenty or thirty feet high, extended from about the foot of Chestnut Street up the river bank for a considerable distance, and remained there for many years.

The ferry across the river was established by Mr. Piggott in the year 1796; but the crossing was performed in the ancient French manner by canoes, or as the Americans at this day call them, *dug outs*. When horses and wagons were to be crossed, two large canoes were lashed together and a platform was placed on them. The Machanan boats were at times used as ferry boats.

The first newspaper printed west of the Mississippi was the "Louisiana Gazette," commenced in 1808, by Joseph Charless, of St. Louis. That was the *beginning* of what is now the "Missouri Republican," of which paper Mr. Charless was one of the proprietors at the time of his death.

The first Methodist church was established here in 1820—founded by Rev. Jesse Walker.

In 1818, in St. Louis, a Baptist church was erected on Third and Market Streets, and occupied the site of the National Hotel. The building was never completed.

In 1820 the first Episcopal church was built in St. Louis, but afterward it passed into the hands of the Baptists.

The Roman Catholic Society, from the earliest settlement of the village, sustained a Catholic church. The Catholic church erected on Elm Street was completed in 1818, and many rich presents were bestowed on it from Paris, through the influence of Bishop Du Bourg.

Dr. Beck, in his Gazetteer, published in 1823, described St. Louis as "*a flourishing post-town.*" Having grown from a hamlet to a city of nearly a quarter of million of inhabitants, within half a century, it would not appear unreasonable, in view of its unsurpassed natural location, and freedom from the local causes which have heretofore retarded its growth, to assume that it will in the next decade double its present population. The increase from 1850 to 1860 was 82,913, equal to 106½ per centum, while that of New York City during the same period was only 56¼, and that of Boston 30 per cent. The population of St. Louis is now estimated at 220,000.

Adam Smith, in his Political Economy, says: "A great city must

have for its foundation agriculture, commerce, and manufactures." The three great rivers that make up "*el Padre de los aquas*"—the father of waters—furnish upwards of 15,000 miles of river navigation, with railways radiating from this city to the four quarters of this continent, daily increasing in length and importance, should answer the demands of commerce; 900,000 square miles of "the garden of the world"—the Upper Mississippi valley—tributary to the city, would certainly satisfy the demand of the writer as to our agricultural capacity; and as to manufacturing, St. Louis is singularly favored, being within four hours' time by railroad of a mineral region, which in point of extent, variety, or purity exceeds any other on this continent. Tin has been found in one county; gold in two; nickel in two; kaolin in three; silver in five; zinc in six; copper in twenty-three; lead in thirty-two; iron in thirty-four, and coal in thirty-six, and new discoveries are constantly being made. Many of these deposits are comparatively undeveloped. Enterprise and capital are wanted for the development of these latent sources of wealth, and fortunes await all who judiciously embark in manufacturing in St. Louis—especially of such articles as are now brought from the East, for making which we have the raw materials almost at our very doors. The flouring business is already carried on more extensively than in any city in the West, and St. Louis flour commands the highest price in every market in this country. Besides other encouraging signs of progress in manufacturing, four blast furnaces, twenty tons each, and a rail mill, with a capacity equal to supplying the present and prospective demand of all railroads west of the Mississippi, are projected.

As an inland shipping port, St. Louis is without a rival, and her steam tonnage exceeds that of any other inland city. Each stream which contributes to the commerce of this port has its regular packets. [See "Steam Navigation on Western Rivers."]

Lippincott's Gazetteer of the World says: "The natural advantages which St. Louis enjoys, as a commercial emporium, are probably not surpassed by those of any inland port in the world. Situated midway between the two oceans, and near the geographical center of the finest agricultural region on the globe, almost at the very focus toward which converge the Mississippi, the Missouri, the Ohio, and the Illinois Rivers, there can be no doubt that she is destined, at no distant period, to become the great receiving and distributing depot of most of the vast region drained by these streams."

Besides her natural commercial advantages, as indicated above, which have given St. Louis an enviable reputation among her sister cities, she is stretching her iron arteries north, south, southwest, and

west, intended not only to traverse the great grain-growing districts of all the northwest, the cattle-producing districts of the west and southwest, the mineral treasures of the Mississippi basin, but eventually, and at no very distant day, to span the western portion of this vast domain, passing through the territories so rich in precious metals, on to the shores of the Pacific, the latter crossing at St. Louis, main trunk lines connecting the extreme northern portion of this continent —far beyond St. Paul—with the Gulf at New Orleans, and Galveston by distinct routes, each passing through St. Louis, and upon all of which work is progressing.

With an inexhaustible supply of the most useful minerals at her very door, in the midst of the most extensive tracts of fertile farming and grazing lands in the world—in area equal to the whole of Europe —with railroad and river communication with the almost boundless cotton fields of the Southern States, there is no good reason why St. Louis shall not ere long become as famous as Sheffield, Birmingham, and Manchester, in the manufacture of metals, of cotton, and of woolens, and at the same time increase her already extensive trade and commerce.

Suburban Towns.—Very few cities are favored with more beautiful surroundings than St. Louis. Besides the many private mansions crowning the elevated slopes and groves, there are several thrifty villages rapidly gaining favor, located on the railroads, inhabited principally by business men of the city. The new suburban town, **Mont Cabanne**, promises to grow more rapidly than any of its predecessors, judging from the fact that upwards of eighty lots were sold during the first two days after the office was opened, in January last. According to the published programme of the "West-End Improvement Co.," their town will embrace over 1200 building lots, fronting more than six miles on avenues eighty to one hundred and sixty feet in width,—the plot being elevated over 100 feet above the Mississippi River, commanding extensive views of the city and surrounding country. The company grade the avenues, plant from two to six rows of shade trees along the avenues, and lay down drain, water, and gas pipes, without expense to the citizens. At this time, May, 1867, a number of men are engaged in grading streets, erecting tower and engine for water works, and building an independent railroad line, to be completed (and run by steam) this year from the city to "Mont Cabanne." Liberal provisions are made for the early introduction of churches, universities, colleges, schools, libraries, and reading-rooms. Being only four miles from the business center of the city, this new enterprise is of great importance, as furnishing an attractive and pleas-

ant home to those who would reside near to business, and still enjoy pure air, pure water, and be free from the smoke and dust of a great commercial city.

Carondelet was originally six miles below St. Louis, and is an incorporated city; but the two cities are growing so rapidly that propositions have been made by the people of the lesser for "annexation," which will probably result in the whole population being governed by one city charter at an early day. There are several extensive manufactories, a large boat-yard and dry-docks, and numerous public institutions in Carondelet, and the population of the city proper is now about 8000. Between St. Louis and Carondelet is a United States Arsenal. At Jefferson Barracks, 10 miles below the city, is also an extensive cantonment, where troops and munitions of war are held in reserve.

SHELBY COUNTY.

This county is situated in the east-northeast part of the State, and contains about 500 square miles. It is drained by the South Tabius, North, and Salt Rivers, affluents of the Mississippi.

The face of the country is undulating, more than half the county being occupied by prairies, the timber embracing oaks, walnut, hickory, and elms. About one-tenth of the county is "bottom land," and probably three-fourths tillable upland. The prairies are based on limestone, and the deficiency of timber is compensated by the abundance of stone coal, which is found a few feet below the surface, especially along Salt River and Ten Mile Creek.

The Soil is well adapted to the culture of corn, wheat, rye, oats, barley, sorghum, hemp, tobacco, and all kinds of vegetables and fruit, except peaches, for which the climate is not favorable. From the abundance of native grapevines, the soil is evidently well adapted to grape culture.

Of mills and manufactories, there are in the county eight saw-mills, five grist-mills, one woolen factory, one distillery, and one tannery.

SHELBYVILLE, the county-seat, was incorporated in 1866, and has a population of 750, is 8 miles north from Shelbina, a brisk town on the Hannibal and St. Joseph Railroad. The latter town has a population of about 1200, and has more than doubled during the past year. There are good openings at Shelbina for manufactories and

thrifty business men. **Clarence** is also a thrifty, growing business center on the railroad, which traverses the southern tier of townships.

STODDARD COUNTY.

This county is in the southeastern portion of the State, bounded on the east by Little River, and on the west by St. François River.

Physical Features.—This county, as well as Dunklin, New Madrid, Pemiscot, and Mississippi, suffered considerable change by the earthquakes of 1811–12, and upon many maps numerous large lakes are represented as covering much of the surface of these counties. This is, in the main, quite erroneous (see "Submerged Lands of Missouri," pp. 30–38). According to the latest estimates, not more than one-fourth of this county is bottom land, and nearly all tillable. All the county is heavily timbered (except where cultivated) with all kinds of oaks, ash, poplar, hickory, black walnut, etc.

Soil and Products.—Corn, sorghum, tobacco, and all kinds of grain, produce well. The soil is of an alluvial formation in the bottoms, lighter and more sandy on the uplands. All kinds of fruit that have been tried, produce good crops. Native grapevines are abundant, and bear bountifully, but no attention given to grape culture. The most profitable business will be stock growing, as there is a very prolific yield of grass, especially upon lands that are too wet for general farming purposes, and the winter range for cattle in the swamps is hardly excelled anywhere.

Castor River affords excellent water power for mills, woolen factories, etc. Bog iron ore is abundant in the swamps, and may at no distant day be profitably worked.

Prospects.—The Iron Mountains and Southern Railroad is being extended southeast from Pilot Knob to Belmont, in Mississippi County, passing through Bloomfield, the county-seat of Stoddard. This line will probably be intersected, about the middle of the eastern line of the county, by a line from Memphis and the South,—thus giving two railroad lines entirely across the county, which will develop resources in Stoddard now unknown, and increase its wealth and population fourfold.

STONE COUNTY.

This county is in the southwestern part of the State, borders on the Arkansas line, and is generally broken and hilly—better adapted to grazing and fruit growing than for farming. About three-fourths of the county is timber land—ash, hickory, oak, and pine of large size. The tillable land is about equally divided between bottom and upland. Corn, wheat, oats, Hungarian grass, hemp, tobacco, sugar-cane, timothy, cotton, and all kinds of fruit yield well. White River and its numerous tributaries furnish fine water power for manufacturing purposes. Both iron and lead have been found in various localities, and, though the early settlers named the present county-seat "Galena," anticipating the development of an extensive mining region, no systematic mining has yet been done; but recent discoveries indicate this as a rich "mineral" county. Grist-mills, saw-mills, tub and pail factories, and carding-machines, could be profitably established upon the excellent water power on the James Fork of White River, Crane Creek, and Flat Creek. Ten to twelve feet fall can be obtained with a dam of five or six feet—level rock bottom and good banks.

SULLIVAN COUNTY.

This county is situated in the northern part of the State, separated from the Iowa State line by Putnam County, and on the dividing line between the Chariton on the east and Grand River on the west, containing an area of 650 square miles.

Physical Features.—About two-thirds of the county is rolling prairie, and one-third timber, interspersed with streams running almost due south, and parallel, from two to four miles apart. Some of the streams afford water power, but, being fed principally by surface water, are not durable. Water for stock is abundant, and clear, cold soft water readily obtained by digging a few feet.

Soil and Products.—The surface soil varies from one to four feet in depth upon the ridge, and in the bottoms from four to six feet, and consists of a light, sandy loam. Corn is the principal crop, and yields about 40 bushels to the acre. Wheat, rye, oats, and barley are but little raised of late years, owing to the chinch bug depredations. Hay and tame grasses yield abundant returns, and stock raising pays well,

owing to the extensive tracts "open" belonging to non-residents, who own fully one-third of the best lands in the county.

Comparatively little attention has been given to fruit growing until quite recently. There are many fine groves of crab apple and plum trees, and a great variety of wild fruits, which indicate that the soil and climate are well adapted for fruit.

Improved lands are worth from $7 to $20 per acre; and unimproved, from $3 to $15—timber being considered most valuable. Here are good openings for woolen factories, and for enterprising, intelligent farmers.

TANEY COUNTY.

This county is situated in the S. S.W. portion of the State, on the Arkansas State line, has an area of about 1000 square miles, and had in 1860 a population of 3627. The first settlements were made in 1816 and 1817, by Jacob Youcheim, Solomon Youcheim, Elijah McAdo, and Mr. Denton. The surface of the county is quite broken and hilly, about one-fourth being good farming land. As a county it is better adapted to raising stock and fruit than for ordinary farming purposes. The principal part is covered with heavy forests of oak, hickory, and large-sized yellow pines. It is well watered by White River and its tributaries, some of which, Little and Big Beaver, Swan, and Bull Creeks, afford good water power for manufacturing purposes. Since the close of the war, extensive surface explorations have settled the question that there are rich deposits of iron, copper, zinc, and lead—the latter paying well from surface diggings. It is stated that two men, with only an axe and wooden fork as tools, took out 1400 lbs. of the best quality of lead in one day, on Swan Creek. Twelve localities are given in the Geological Report, where lead was found by the State Geologist, and one of copper: 20,000 pounds were then taken from a shaft but ten feet deep, while a neighboring shaft yielded 170,000 lbs. per week. When the Atlantic and Pacific R. R. is completed to Springfield, it will furnish an outlet to this region. In anticipation of this, and owing to recent rich discoveries, land has advanced considerably, and companies have been formed for mining in this county upon an extensive scale.

TEXAS COUNTY.

This county is in the southern part of the State, has an area of about 1250 square miles. The so-called Ozark Mountains extend through this county, and a very considerable portion of it is what may be termed "broken." There are extensive forests of yellow pine, and some of the largest pine-trees in the State are found in this county. The surface is fertile, but the county at large is better adapted for lumbering, stock raising, fruit growing, and mineral purposes, than for agriculture.

The first settlements in the territory now embraced in this county were made in 1820, by Patton, Boone, Truesdale, Baldridge, McDonald, Buckhardt, Ormsby, and others, who built saw-mills at an early day on the Piney River, and rafted the lumber to St. Louis, down the Gasconade River. If lumbering business was profitable or practicable 30 or 40 years ago, when the State was a wilderness, and St. Louis had less than 9000 population, certainly it should be now, when we have a population of upwards of 200,000, and an unlimited demand for lumber of all kinds, to supply which the lumber is brought several hundred miles by river, lake, and railroad. Capitalists would do well to investigate this matter. There are extensive pineries much nearer, and some of them convenient to or traversed by rivers and railroads.

Iron and lead ores have been found in this county, but its present remoteness from railroad communication have deterred parties from making thorough investigations as to quantity or quality. Clay suitable for stone-ware, and lime and sand stone for building purposes are abundant.

HOUSTON, the county-seat, in common with the greater portion of Missouri, was sadly "demoralized" by the war, and but few of the original 200 population were left; but immigrants are settling up the county rapidly, and many of the towns, almost or quite depopulated by the war, have a larger, more intelligent, and more energetic population now than ever before. From Houston to Springfield, 80 miles; to Ironton, 65; to nearest point on the Southwest Pacific R. R., 40 miles.

VERNON COUNTY.

This county is bounded on the west by the State of Kansas, on the east by St. Clair and Cedar, north by Bates, and south by Barton Counties. This county was formed from Bates and Cass Counties, February 17th, 1851, and in 1860 contained a population of 5062. The assessors' returns for 1859 gave the number of acres subject to tax at 504,201, being a larger number of acres than any county returned in the State. This county suffered severely during the war of the rebellion, and was one of those entirely depopulated, but it is now being rapidly filled up by an intelligent and energetic class of citizens, and the next census will show a larger population than ever before.

The Face of the Country is generally undulating, with rather more timber than prairie. The prairies are of a rich sandy loam, underlaid by a substratum of clay, except upon the large mounds, which are quite numerous throughout the county, where the yellow limestone soil is found very productive. There is an abundance of timber for all time to come, especially when it is considered that stone coal of good quality is found almost everywhere upon the prairie uplands. The timber is large, and embraces nearly all kinds found in Southwest Missouri except cedar. The county is drained by the Little Osage and Maraton Rivers, Big Dry Wood, Little Dry Wood, east and west forks of Clear Creek, and the small tributaries of each.

The Soil is fertile, and well adapted to agricultural purposes. Stock growing is a very successful and profitable business, for which the native grasses and climate render this county peculiarly well adapted. Many persons do not feed their young cattle or stock hogs during the entire year, as the grass in the timbered bottoms and prairie valleys never dies, unless burned down by prairie fires, and the "mast" and roots are generally very abundant for hogs, and they prefer them to corn.

Ruins of Earthworks and Furnaces probably constructed by De Soto more than 300 years ago.—There are some antiquities in this county which have caused universal curiosity with all who have ever seen them. They are thus described by K. G. Pearson, in a communication to the *Jefferson Inquirer*, in January, 1847: "**Gold and Silver Mines.**—On the prairie, between the waters of the lower Dry Woods and Clear Creek, in Bates (now Vernon) County, are to be seen the signs of old mining operations, consisting of four ditches, four or five feet wide, extending about a quarter of a mile in length—in four right parallel lines, terminating at the commencement of three

parallel curved ditches of like dimensions—these terminating at the commencement of two others, inversely curved, and about 200 yards in length. In the vicinity of these ditches, in a branch, there have been found very fair specimens of silver ore; and about 12 miles from this place, in the nearest timber, can be seen the foundations of three furnaces, with quantities of cinder, among which has been found a piece of pure gold, about the size of a common rifle ball. The ruins of these works are readily visible, and arrest the attention of the most indifferent passer-by. It is probable that men of science have labored here, and with a well-paying success, but history is silent on the subject."

It is possible that the earthwork above described was a part of the fortification made by De Soto in 1541–42, for his winter quarters, and that during the four months' stay of himself and his company of Spaniards, they may have erected and used the furnaces, for the purposes indicated. There is no question about his having crossed the Ozark Mountains, each way, and it is almost certain that his successor, Moscoso, also visited the country west of the Ozarks in 1542. In the notes of his expeditions, De Soto mentions a place called "The land of Tula," which historians have located on the divide between the Upper Ouchita River and the Little Missouri, in Arkansas. Wilmer, in his Life of De Soto, states that De Soto and his troupe "passed over a rough mountainous country, interspersed with gloomy and almost impenetrable forests, climbing high mountains, and crossing deep, rapid rivers," and that "after having journeyed more than 240 miles from Tula, they once more came to cultivated lands and a populous village, bearing the name of Autiamgue. Here De Soto and his companions fixed their winter quarters, and strongly fortified their village to defend it against any attacks from the Indians. They remained here during the winter, and left in April, 1542, for the Mississippi River, *via* Hot Springs of Arkansas."

Our reasons for concluding that the earthworks and furnaces above described were constructed by De Soto, are, 1st—because the locality is the precise distance named in his notes, from the land of Tula above named; 2d, the route across the Ozark ridge is well described; 3d, the earthworks are similar to those found elsewhere, used to aid in fortifying a settlement; 4th, they were in search of precious metals, and the construction of the furnace foundations indicate that they were built by men conversant with the arts and sciences; 5th, the numerous mounds in the vicinity, as well as the tomahawks and arrow-points found hereabouts, indicate this to have once been a populous Indian village.

As to the correctness of our conclusions, future investigations must determine; but we believe this to have been the winter quarters of Ferdinand De Soto and his companions in 1541–1542, the field of their mining and smelting experiments, and the burial place of several of De Soto's company, one of whom was the talented interpreter Juan Ortiz (whose thrilling narrative is given at length in Wilmer's life of De Soto).

WARREN COUNTY.

This county is situated on the left bank of the Missouri River, bounded on the east by St. Charles and Lincoln, on the west by Montgomery, and on the north by Lincoln and Montgomery Counties.

History.—The first settlements upon the territory now embraced in this county were made in 1801 and 1802, by Flanders Calaway, David Bryan, William and Robert Ramsey, and Thomas Kennedy. The last named settled in the northern part of the county. All the others located near the Missouri River. The incidents related of the early settlement of St. Charles County were transacted before either Montgomery or Warren were taken from St. Charles County. The original tombs of Col. Daniel Boone and wife are still preserved, near Marthasville, in the southern part of the county, marked by a rough block or slab of limestone, which still bears the rude but plain inscription cut upon it by inexperienced but friendly hands. Both Col. Boone and his wife died in St. Charles County, were buried in Warren, and afterward their remains were removed to Frankfort, Ky.

Physical Features.—The extent of this county along the river is about twenty-six miles, and next the stream lies a rich, heavily timbered bottom, varying from one to five miles in width. Parallel to this extends a range of rugged river bluffs, affording valuable building stone, which outcrops, and is easily quarried. These hills and slopes are well timbered, and in many places mineral deposits have been found upon them. They are in some places too broken for cultivation. The northern portion is better adapted to agriculture—the prairies being larger and the soil more fertile. Besides the Missouri, the county is drained by Big, Massie's, Smith's, Charette, and Bear Creeks. There are numerous fine springs in the county.

The **Soil** produces paying crops of wheat, barley, corn, oats, sorghum, tobacco, potatoes, hemp, flax, clover, grass, apples, pears, peaches, grapes, plums, cherries, and all small fruits in abundance.

Among the advantages possessed by this county may be named her facilities for transporting her products, either by the Missouri, which forms her southern boundary, or by the North Missouri Railroad, which traverses the county; and the desirable division of timber land and the most fertile prairie and bottom lands.

WARRENTON, the county-seat, 57 miles from St. Louis, had in February, 1867, a population of 600; 3 churches; 2 schools; 8 dry goods stores; 7 drug stores, grogshops, and groceries; 3 shoemakers; 2 tin shops; 3 hotels; 5 lawyers, and 4 doctors; 3 carpenter shops; 3 saddle-, harness-, and wagon-makers; one saw- and grist-mill. Here also is the Western Educational Institute and Orphan Asylum. **Wright City**, population, 200; church burnt down. It has 1 school; 6 dry goods and grocery stores; 2 wagon-makers and blacksmith shops; 2 tobacco factories; 1 doctor, and no lawyer. **Pendleton**, inhabitants 65; 2 dry goods stores and groceries; 2 wagon-makers and blacksmith shops. **Marthasville, Pinckney, Pendleton,** and **Bridgeport**, have stores, etc., and are small business centers.

WASHINGTON COUNTY.

This county is bounded on the east by St. François, northeast by Jefferson, north by Franklin, west by Crawford, and south by Iron Counties.

Physical Features.—The surface is generally broken and sterile—interspersed with hills, ridges, and knobs, some of which attain an altitude of from 200 to 300 feet above the valleys. Timber abundant, consisting principally of white and black oak, yellow pine, hickory, ash, sugar maple, cedar, etc. Yellow pine is principally confined to the southwestern part of the county. This county is almost an entire lead field, with a bed of limestone and sandstone rock, and a soil of clay from one to ten feet in depth. The deepest clay beds are generally uppermost on the ridges. The uplands are really flat ridges, with a good subsoil of red and yellow clay especially well adapted to fruit culture. The alluvial soil is very productive, and yields abundant crops of all kinds of agricultural products. "Little Pilot Knob," a point of some note, is situated in the south part of T. 38, and is crossed by the 5th principal meridian line, has an altitude of about 1500 feet above the Miss., at St. Louis, and the ridges of this region culminate at this point. These ridges occasionally break into

bluffs, presenting strata of sandstone, flint and limestone, some varieties of which are excellent for building purposes.

Minerals.—In some respects this is considered the richest county in minerals in the State. There is scarcely a township in the whole county in which lead ore cannot be found; but the mining, until recently, has been in "surface diggings," extending from 10 to 40 feet in depth. Notwithstanding some of these mines have been worked almost constantly for more than a century, yielding large products, the deposit seems to increase the farther the veins are followed; and there is every reason to believe that the main bodies of ore lie still below most of the present diggings. Besides lead ore, there are in this county silver, copper, chalk, copperas, black-lead, brimstone, zinc, and even gold is alleged to have been discovered. Only lead, copper, and zinc have been worked to any extent. Some thirty-five years ago Captain Hughes and Elisha Wallen discovered a bed of copper ore some eight miles west from Iron Mountain, which they worked for some time, and smelted in a rude furnace near Big River, on Hughes Creek. This was probably the first copper smelted in the State; and though copper mining at that day, and under all the disadvantages, and with the inexperience of the operators, proved profitable, the mines or diggings have not been worked for several years. Seven miles northwest from this mine is another extensive deposit of copper, and still another northeast, and the indications are that it is very abundant. About two miles west from Irondale is the eastern boundary of a circular-shaped zinc field, which has a circumference of from eight to ten miles. The ore is the carbonate and silicates, and crops out in several localities; masses weighing 700 and 800 lbs. having been mined from a depth of three or four feet below the surface. Small smelting furnaces were erected here some years ago by the Messrs. Anderson, and some pig zinc and oxide made from this ore. Hematite iron ore has been found very abundant, and sulphate of barytes or heavy spar, called by miners "white tiff," is found in various parts of the country, and has become an article of considerable commercial value.

History.—Prof. Litton, in the State Geological Report, remarks that "it was in this county that the first mining of lead ore, in Missouri, was commenced." But explorations were made through the Territory, under Crozat, who relinquished his patent to the king in 1717; and Schoolcraft (who is good authority) states that in 1719 Sieur de Lochon prospected along the Maramec, and succeeded in raising from two to three thousand pounds of ore, from which he extracted some lead, and two drachms of silver. He abandoned the enterprise, and was succeeded by a Spaniard named Antonio, who met

with no better success. La Renaudiere and a company of the king's miners next undertook to mine for lead, but having no knowledge of the proper construction of furnaces, soon abandoned the enterprise to a private company, of whom Sieur Renault was one of the directors, and by whom the works were superintended. Renault established himself near Fort Chartres, Illinois, and sent prospecting parties in every direction through portions of Illinois and (the then) Upper Louisiana. "These parties were either headed by Renault, or by M. La Motte, an agent versed in the knowledge of minerals, whom he had brought over with him. In one of the earliest of these excursions La Motte discovered the lead mines on St. François, which bear his name; and at a subsequent period Renault made a discovery of those extensive mines north of Potosi, which continue to be called after the discoverer."* Mine à Breton was discovered by Francis Breton, about the year 1763, on what is now known as Breton Creek, near where the present city of Potosi stands. M. Breton obtained a grant of four acres as a compensation for his discovery; and afterward went to Little Rock Ferry, some three or four miles above Ste. Genevieve, where he resided a number of years, and died about thirty years ago at a very advanced age.

Other mines of lead were also found, but their distinctive appellations have not survived. A proof of the diligence with which Renault and others prosecuted their objects is furnished by the number and extent of the old diggings which are now found in various parts of the country. There are reasons to conclude that great quantities of lead were made. It was conveyed to the river on pack-horses, sent to New Orleans in boats, and thence chiefly shipped to France. The first regular shaft sunk in this mining district was by Moses Austin, from Virginia, who received a concession of one league of land, comprehending what was considered the best part of the mineral land, upon condition that he should erect a smelting furnace, and also manufacture sheet lead. This grant was made to him in 1763, and he complied with it by the erection of a log furnace, and manufactured sheet lead by pouring the melted lead upon a flat rock, where it formed in sheets about three feet square.

"Durham Hall," at Potosi, for several years past the residence of (the late) John Deane, was erected about the year 1794, and at the time of its erection probably the most costly, and in many respects the best dwelling-house in the State. Some important incidents in history are connected with "Durham Hall." It was during his resi-

* Schoolcraft's View of the Lead Mines of Missouri.

dence here that Moses Austin planned and carried into execution the "Expedition to Texas," which resulted in the settlement of Texas, and subsequently her annexation to the United States, followed by the Mexican war, the acquisition of California, etc. Moses Austin went to Texas in 1819, made a claim, received a grant from Mexico upon condition that he would bring in a certain number of permanent settlers. He returned to Missouri in 1820 to form a colony to go with him, but died at Hazel Run without ever returning. His son, Stephen F. Austin, was a member of the Legislature from this county in 1818, moved to Arkansas in 1819, where he was elected Judge of the Court of Common Pleas; and after his father's death went to Texas to fulfill the requirements of the grant made by Mexico. He was for some time imprisoned in Mexico, and after his release induced a number of families from this county, and those adjoining, to move to Texas; which enabled him to carry out the provision of the grant made to his father. There is not a single member of this important pioneer family now residing in the State. The original grant made by the Spanish Government to Moses Austin (and confirmed by the U. S.) embraced 5408 acres, of what were then deemed the best mineral lands in the country, and a county surveyor stated there could be a paying mine struck on almost any 100 acres of the entire tract.

The first permanent settlements were made here in 1721 or 1722, by miners, who mined to some extent from that time to 1740, under Renault and the Company of the West. In 1798 the first regular shaft was sunk by Moses Austin and sons, from Virginia, already alluded to.

In 1811, when Schoolcraft visited Potosi, he stated it to contain 70 voters, and about 200 inhabitants. There were then 45 principal mines or diggings within a circumference of less than 40 miles. Potosi and its vicinity then yielded annually about three millions of pounds of lead, and furnished employment to from 1100 to 1200 hands. Prepared ore delivered at the furnaces was worth $2 per cwt., paid principally in merchandise. Pig lead sold at $4 at the mines, and $4.50 at the river, and at $7 in the Atlantic cities. From 1816 to 1820 the quantity of lead made diminished, with the decreasing demand, but works revived again in 1821 and '22. In 1817 an academy company was organized upon a liberal scale. In 1822 the town (including Mine à Burton, then an old settlement) contained 80 buildings, including a court-house, jail, and academy, several stores, distilleries, saw-mill, and flour-mills, and several lead furnaces.

"Old Mines" were opened and wrought by Renault in 1726, when he was in the employ of the Company of the West, and settled by Auguste Valle and about 30 others, under a concession from Governor

Delassus, dated Feb. 3d, 1804. John T. Smith settled there in 1800. Mine à Renault was discovered by Renault in 1724, when in search of silver, under the King of France.

[The particulars respecting the discovery and early working of the lead mines will be found in the American State Papers, vol. i. p. 188; and a list of titles granted in same, vol. iii. p. 293.]

Philip Cole, Esq., one of the oldest citizens of this county, stated that he had seen 500 windlasses running at one time in the mines about Potosi. Each mine requiring at least 4 hands, would make an aggregate of 2000 persons mining, in 1824–25. He says that three men took out $10,000 worth of mineral in one summer, and sold it for $10 per 1000 lbs. The mineral at that time was carried to Ste. Genevieve in French carts with tireless wheels, and instead of yokes, the oxen had each a stick tied across the horns, by which they drew the load. The driver unloaded a portion of the lead at the bottom of the hill, carried it up himself, and reloaded at the top. Mark the change! Now that there is a railroad running to the very heart of this mining district, and smelting furnaces in operation, the proprietors of which will buy the mineral as fast as dug, and pay for it at the hole (or mine), requiring only one-tenth of the mineral procured for the privilege of digging wherever the miner may think best; yet there are now less than 150 miners in the whole county who follow it steadily as a business, and the furnaces would be idle if they depended upon volunteer miners to furnish the mineral. This class work in a haphazard manner from 2 to 4 hours per day, and take out enough mineral to make a good living—to supply their daily wants—which is all they care for. This district, once worked by 2000 miners at a time, has not now—nor has it had during the past 8 years—over 150 miners upon its entire area; and, probably, not a single miner in the county has made a systematic business of it, and worked regularly through the entire year. Allured and dazzled by the prospect of speedily acquiring fortunes in the gold mines, these miners have abandoned the lead mines throughout the State, and gone to California, Nevada, Montana, etc.; and to-day their places remain open to any who will fill them. There are thousands of able-bodied men, waiting about large cities, seeking employment, who could easily make a living here, and, by industry and perseverance, amass fortunes in the mining districts of this State. The necessary tools are a pick and a shovel—the windlass they can make themselves; the total capital to begin with need not exceed $6; and the mineral is bought and paid for at the diggings, as fast as dug, and hauled from the mine to the smelting furnace by the smelters.

If these facts were generally known by the young men of the United States, there would be less idleness—less penury and want; and, besides reaping a rich reward for their labors, they would aid in developing the mineral resources of this great mineral State.

A Word to Capitalists.—There is every reason for believing that, although our mines have been worked for more than a hundred years, and millions of pounds of the best of ore taken out annually, the *real true leads*, lying below, have never been reached. The mining here has been confined to shallow surface diggings, and however rich the vein may be they are at work upon, when they go so low as to be troubled with water, the miners abandon their diggings and commence anew elsewhere. There are hundreds of localities where, by the erection of machinery for keeping out the water, these shafts could be worked with profit; and as the richest veins in the State lie from 50 to 170 feet below the surface, is it not probable that, by continuing these shafts (now from 15 to 20 feet deep), that these mines could be made more profitable than ever before?

Public Improvements.—This county is traversed by the Iron Mountain Railroad, for the construction of which the county subscribed liberally, and, after its completion, the citizens of Potosi, being four miles from the main line, determined to build a branch to intersect it. Then there were but 300 white inhabitants in the town, yet the road was built at a cost of $34,000, the cash paid on its completion, and the road finished in three months instead of twelve, the contract time. The opening of this branch road was celebrated July 4th, 1859. The junction with the main line is at Mineral Point.

There are twelve to fifteen steam and water power saw-mills in the county, which, in some seasons, have manufactured upwards of 10,000,000 feet of lumber, principally shipped to St. Louis. There is no good reason why much of the lumber now brought from the pineries of Wisconsin and Minnesota, through Chicago, should not be manufactured here, and in our other lumbering districts, much cheaper.

TOWNS.—The seat of justice, **Potosi**, is situated near the center of the county, surrounded by a beautiful group of hills, covered with a heavy growth of oak and pine trees. Except Ste. Genevieve, this is the oldest town in the State. The location is pleasant and healthy, the people generally intelligent, enterprising, and hospitable. This, in common with most of the towns in the interior, suffered severely during the war. There are good openings for mechanics, manufacturers, miners, and Northern or Eastern men of capital and enterprise—*labor is capital.* **Irondale** is pleasantly situated on the Iron Mountain

Railroad, sixty-nine miles from St. Louis, seventeen from Pilot Knob, and ten from Potosi, laid out by John G. Scott, Esq., in the spring of 1859. The town is the center of a very fertile farming region, and surrounded by a rich mineral district. Iron, copper, and lead mines have been successfully worked near the town. Messrs. J. G. Scott & Co. erected at Irondale a large iron smelting furnace, which, in point of capacity and completeness, according to its size, is one of the best in the United States. It is now the property of Edw. Harrison, and is being worked with great success and profit. **Caledonia** was first settled about 1822, is twelve miles south from Potosi, surrounded by a beautiful range of hills, in Bellevue Valley, the best body of farming land in the county. **Old Mines** was settled as early as 1726 by miners, who worked under Renault for the Company of the West. In 1804 it was settled, under Augustus and Basil Valle, by about thirty miners. The Valles received a concession from Gov. Delassus to the miners at this place. **Mineral Point** is sixty-one miles from St. Louis—the junction of the Potosi Branch with the Iron Mountain Railroad. Cadet, 57 miles, and Hopewell, 65 miles from St. Louis, are each railroad stations and shipping points for several lead furnaces.

WAYNE COUNTY.

This county is situated in the southeastern part of the State, and the territory now included within its borders was first settled in 1801, but the settlements have been principally confined to the valleys, and being remote from railroad or river navigation, and so little known of the mineral wealth, the county has been but slowly settled; and in 1860 the population of the whole county was but 5333.

Physical Features.—The general character of the surface is broken, the valleys fertile and well adapted to farming purposes, while some of the uplands produce satisfactory crops of all kinds of fruit, and some of the so-called "ridges" have produced as high as fifty bushels of corn and twenty to thirty bushels of wheat to the acre. Yellow pine, oaks, hickory, walnut, cherry, etc., grow to a very large size. The St. François and its tributaries, together with numerous clear cold springs, afford an abundance of water. Water power for mills and manufactories can be found on Clark Creek and Bear Creek. Some fine agricultural lands in the valleys, and in range 4 east, town-

ship 29; in range 5 east, townships 27, 28, and 29; also in ranges 6 and 7 east, in townships 27, 28, 29, and 30.

Minerals.—Wayne County is very rich in minerals, but little has been done toward developing them. Hematite iron has been discovered to be very abundant in the central and southeastern parts of the county; and specimens of the ore have been taken out at the following localities, some of which are very extensive beds, and of superior qualities: range 4 east, townships 27, 28, and on section 24 of township 30; in range 5 east, sections 9 and 16, township 3; in ranges 6 and 7 east, townships 28, 29, and 30. The *Western Journal and Civilian*, one of the most wide-awake, progressive papers ever published in the West, in 1852 said: "Notwithstanding the vast amount of iron ore found in the Iron Mountain and Pilot Knob, I am of the opinion Wayne County contains more iron ore than any county in the State, and probably nearly as much water power." Copper ore is also abundant; an extensive copper region extends from Iron and Madison down into the north central part of Wayne. A high jaspery ridge, called Copper Mountain, passes through section 24, township 30, range 4 east, and sections 18 and 19, township 30, range 5 east, etc. Lead veins have been discovered on section 8, township 20, range 4 east, and strong indications of good deposits in townships 29 and 31, range 4 east.

Chalybeate springs, the medicinal properties of which are highly spoken of, are in section 24, township 30, range 4 east, and section 18, township 30, range 5 east.

When the mineral wealth, the extent of her agricultural resources, and her valuable timber lands shall be properly represented, and a cheap and speedy transit to reliable markets secured by the extension of the Iron Mountain Railroad through this county to the South, Wayne will rank among the most populous and important counties of Southeast Missouri.

GREENVILLE, the county-seat, is on the north half of section 13, township 28, range 5 east, on the east bank of the St. François River, with a good agricultural district above and below in the valleys. This portion of the State suffered greatly during the war, but the population is now about as in 1860, when it was as follows: population of Greenville about 200; **Patterson**, 30; **Collier**, 30; **Grangerville**, 50. Distance from Greenville to the railroad at Pilot Knob, 40 miles; to the Mississippi River, 65 miles.

WEBSTER COUNTY.

This county is situated in the eastern part of Southwest Missouri, and has an area of about 550 square miles, and was formed from portions of Wright and Green Counties.

Physical Features.—The principal part of the county is rough, broken, timber land. The Ozark hills extend through the center of the county, and many of the small tributaries of the Gasconade pass from the center to the northeast, while those of the White River run in a southwestern direction from the Ozark ridge. The timber is principally oak and hickory.

The **Soil** in the valleys and on some of the uplands is fertile, and well adapted to farming and grazing, and there are many of the slopes and hillsides that would make excellent vineyards and orchards. More attention has been paid to stock raising than to any other branch of farming, and it has proved very profitable. All kinds of fruit grow to perfection.

Minerals.—The first discovery of mineral in this county was by Capt. W. D. Murphy, now of Camden County, who found it in several localities in T. 30 R. 17 west, and also upon James' Fork of White River. Some 400,000 lbs. of lead were raised and smelted in a log furnace, up to February, 1846, when Mr. M. removed to Linn Creek. Iron ore has been found, but nothing has been done lately in any kind of mining.

MARSHFIELD is the county-seat, pleasantly located, and will be on the Atlantic and Pacific R. R., when extended. **Dallas** and **Sand Spring** are each good business centers.

WORTH COUNTY.

This county is one of the newest (and smallest) counties in the State, formed from the northern part of Gentry County, bordering on the Iowa State line, in the northwestern part of the State. This county embraces only 260 square miles, being 20 miles one way and 13 the other, and has 5000 inhabitants. The taxable property, in May, 1867, amounted to over $800,000.

Physical Features.—The face of the country is undulating and rolling, about one-third timber land, consisting of oak, hickory, maple, ash, elm, lynn, cottonwood, etc.

The **Soil** is generally fertile, and well adapted to the production of all kinds of grain, grasses, vegetables, and fruit, except peaches, which have been unsuccessful. Excellent grazing country, well watered and plenty of "range."

Flouring mills and manufactories needed, and the citizens offer great inducements to capitalists who will establish woolen factories and flouring mills. Uncultivated land can be had at from $2 to $5 per acre, and partly improved farms at from $4 to $10 per acre.

GRANT CITY is the county-seat and principal town. **Smithton** is also a flourishing town.

WRIGHT COUNTY.

This county is situated in the south central part of the State, bounded on the east by Texas, west by Webster, north by Laclede, and south by Douglas, and contains an area of about 500 square miles. The first settlements were made in 1838, at which time sixteen persons located here. Population in 1860, 4506.

Physical Features.—The surface of the county is in some portions hilly and broken, others moderately undulating. The Ozark range of hills pass in an east and west direction through the southern portion of the county, and some of the hills attain an elevation of 450 feet above the valleys of the streams. Along the Gasconade the hills are precipitous, and the scenery wild and picturesque. Principally covered with oaks and yellow pine. Good water-power on the Gasconade.

The **Soils** of the valleys and of the undulating uplands are fertile, and produce well, while those upon the cherty ridges are thin and generally sterile. The proportion of tillable upland is small, except for grapes and other fruits. On account of its high, dry, porous soils, and salubrious and healthy climate, some of the citizens have named it the "American Italy."

Products.—The most profitable products now marketed are stock, corn, wheat, tobacco, and hay. The present shipping point is Linn Creek. Marshfield will be the nearest railroad depot. Farmers have raised 1200 lbs. of hemp, 1200 lbs. tobacco, 75 bushels of corn to the acre, and grains, grasses, fruits, and vegetables in proportion.

Minerals.—Lead ore has been found both on the surface and in the rocks beneath, in sections 1, 2, 10, 11, 23, and 24, in township 29, range 12 west; and when the southwest branch of Pacific Railroad is completed (which passes near the north border of the county), these mines will doubtless be opened and prove profitable. Iron and copper have also been found, but no extensive explorations made.

HARTVILLE, the county-seat, is on Wood's Fork of the Gasconade, and though almost obliterated by the war, is rapidly being rebuilt by a new population. **Mountain Grove** is also a business center, 18 miles from Hartville.

APPENDIX.

INTRODUCTION OF STEAM NAVIGATION UPON WESTERN RIVERS.

When we consider the immensity of our ocean, lake, and river steam tonnage, and our present maritime position, it is a matter of some interest to reflect that this powerful motor was cradled in the western rivers of the United States.

In this subject we embrace what is generally termed "The Valley of the Mississippi," of which St. Louis is the natural metropolis. Strictly speaking, this valley is bounded on the west by the Rocky Mountains, and on the east by the Alleghanies, embracing a drainage of 1,244,000 square miles—more than half the entire area of the United States. The Upper Mississippi Valley is composed of three subordinate basins, whose respective dimensions are as follows:

The Ohio basin	214,000 square miles.
The Upper Mississippi	169,000 " "
The Missouri	518,000 " "
Total	901,000

The following *is the length of the navigable streams, tributary to St. Louis:* Missouri, 5300; Mississippi, 2463; Ohio, 975; Arkansas, 800; Tennessee, 780; Illinois, 300; Cumberland, 370; White, 500; Kentucky, 117; Wabash, 335; Wisconsin, 350; Red River, 800; Fox, 200; Osage, 200; Kansas, 100; Black River to Poplar Bluffs, about 275; Rock River, reported to be 200; Yazoo, 100; St. Francis (?), 100; Big Sioux, 75; DesMoines (?), 200; Yellow Stone, 800; Minnesota, 295; St. Croix, 60; Monongahela, 91; Muskingum, 91; Green River, 186; Kanawha, 100; Salt, 30; Sandy, 30; making the total navigation 16,232 miles.

The distances given above generally refer to the length of regular steamboat navigation, and several of the streams have been penetrated much farther; yet some of the smaller streams will need improvement, before the entire length named will be practically used for steam navigation.

In 1712, when La Motte Cadillac was ordered by the Ministry to accompany the agents of Crozat, and assist them in establishing trad-

ing posts on the Wabash and Illinois Rivers, he became vexed, and replied: "I have seen Crozat's instructions to his agents; I thought they issued from a lunatic asylum; and there appeared to me to be no more sense in them than in the Apocalypse. What! is it expected that for any commercial or profitable purposes boats will ever be able to run up the Mississippi into the Wabash, the Missouri, or the Red River? One might as well try to bite a slice off the moon! Not only are these rivers as rapid as the Rhone, but, in their crooked course, they imitate to perfection a snake's undulations. Hence, for instance, on every turn of the Mississippi, it would be necessary to wait for a change of wind, if wind could be had, because this river is so lined up with thick wood, that very little wind has access to its bed."*

The following letter from Robert Fulton will be read with interest in connection with this chapter:

Letter from Robert Fulton.

NEW YORK, Aug. 2, 1807.

JOEL BARLOW, Philada.

My dear Friend:—My steamboat voyage to Albany and back has turned out rather more favorable than I had calculated. The distance from New York to Albany is 150 miles: I run it up in 32 hours, and down in 30 hours; the latter being just 5 miles an hour. I had a light breeze against me the whole way going and coming, so that no use was made of my sails, and the voyage has been performed wholly by the power of the engine. I overtook many sloops and schooners beating to windward, and passed them as if they had been at anchor. The power of propelling boats by steam is now fully proved. The morning I left New York there was not, perhaps, thirty persons in the city who believed the boat would ever move one mile an hour, or be of the least utility. And while we were putting off from the wharf, which was crowded with spectators, I heard a number of sarcastic remarks: this is the way, you know, in which ignorant men compliment what they call philosophers and projectors.

Having employed much time, and money, and zeal in accomplishing this work, it gives me, as it will you, great pleasure to see it so fully answer my expectations. It will give a cheap and quick conveyance to merchandise on the Mississippi, Missouri, and great rivers, which are now laying open their treasures to the enterprise of our countrymen; and although the prospect of personal emolument has been some inducement to me, yet I feel infinitely more pleasure in reflecting, with you, on the immense advantage that my country will derive from the invention. Yours truly,

ROBERT FULTON.

The first steamboat that navigated the western waters was the *Orleans*, 400 tons, constructed by Nicholas I. Roosevelt, at Pittsburg, from which port she sailed on the 6th of December, 1812, and arrived about the 24th of the same month; and run between New Orleans and Natchez for 2 years, making her voyages generally in 17 days. This boat sunk near Baton Rouge.

The next was the *Comet*, 25 tons, which made a voyage to Louisville in 1813, and descended to New Orleans in 1814; made two voyages to Natchez, and was sold, and her engine used for driving a cotton gin. The *Comet* had a vibrating cylinder, on French's patent, granted in 1809.

The *Vesuvius*, 340 tons, built at Pittsburg, by Fulton, and owned

* Gayarres' Louisiana, p. 137.

by a company of gentlemen living in New York and New Orleans, next made its appearance. This was the pioneer boat in the New Orleans and Louisville trade, which she entered in 1815.

The *Buffalo*, 300 tons, was built at Pittsburg, by Mr. Latrobe. It was constructed with a wide stern, for the purpose of forming an eddy behind her, in which she might tow another boat (the James Monroe) which had been fitted up for passengers alone, and would be safe in case of an explosion. Having no machinery, and being hitched behind the *Buffalo*, the *Monroe* was nick-named the "Buffalo Calf." The *Buffalo* was 13 months in making her first (and only) trip, and was afterward sold at sheriff's sale.

Another boat, the *Rumsey*, 200 tons, was built at the mouth of Silver Creek, opposite Shippingsport, Ky., to be propelled by a force pump, having a large square box running from bow to stern, through which water was forced out by the pump, and this was to do away with the wheel altogether. When completed, she made a trial trip; went down stream admirably, but when attempting to return, she could not get back, and was obliged to cast anchor and remain in *statu quo*.

The *Washington*, 400 tons, a double-decker, built at Wheeling, constructed and partly owned by Capt. H. M. Shreve, was then the finest boat on the western rivers. The boilers were upon the upper deck, which the Cincinnati papers say "was Capt. Shreve's improvement, and a very valuable one." Capt. Shreve made several very successful trips, and in March, 1817, made the trip from New Orleans to Louisville in 25 days, for accomplishing which the people of Louisville gave him a public dinner. The usual time required by other boats was 40 days, and from 2 to 3 months to make a round trip. Then freights were $5\frac{1}{2}$ to $6\frac{1}{4}$ cts. per pound up, and 1 ct. down, and the passage up was $150, and $50 down.

The first steamboat arrival at St. Louis was the "*General Pike*," which was built in Louisville, propelled by a low-pressure engine, and reached St. Louis August 2d, 1817, under command of Capt. Jacob Reed. She presented a strange spectacle, and soon the report was circulated through town, and the principal part of the population were gazing on with wonder.

Two years later, May 19, 1819, the "*Independence*," Capt. Nelson, had stemmed the tide of the Missouri as far as Old Franklin, after a passage of seven days from St. Louis.

The 2d of June, 1819, witnessed the first steamboat arrival from New Orleans, the passage having been made by Capt. Armitage of the "*Harriet*," in 27 days.

The steamer *Johnson* was built at Wheeling in 1818. She was a stern-wheeler of about 150 tons burden, 2 boilers, and had wheels with paddles two feet long, working in 2 wells, or holes built in the stern, one each side of the helm; a large portion of the water was thrown against the stern of the boat, so that she lost much of her power by reaction. She was 31 days making the trip from New Orleans to Louisville, and 32 times aground.

In early days the steamboats were very often commanded by sea-captains, old barge-men, and flat-boat-men. The former class usually had their lead and compass. The pilot stood and gave directions to

the steersman, thus, "Port," "steady," "starboard," "larboard," etc., as the case required. Our informant relates an incident of an old sea-captain, who, holding conversation with some one on shore, shut off the steam and stood upon the safety-valve, to keep down the noise during conversation.

In March, 1819, an Exploring Expedition was fitted out for the Upper Missouri by the government. The boats fitted out for the trip were the *Johnson*, Capt. Boulin; the *Expedition*, a new boat, Capt. S. Craig; the *Jefferson*, Capt. Offutt, and the *Calhoun*. They were destined for the Yellow Stone. The party of naturalists consisted of Messrs. Say, Jessup, Peale, Seymour, Biddle, and Swift, with Mr. Dougherty, Indian Agent and Interpreter, who left Fort Osage a few days previous to the engineers' departure, with the intention of proceeding to Council Bluffs. While encamped on the 18th of August, they were visited by a party of Pawnee and Otoe Indians, who stole their horses, and plundered from them everything but their clothing. After wandering several days in almost a destitute condition, they were relieved by a party of Kansas Indians, and supplied with horses, enabling them to return to Martin Cantonment, where they arrived on the 28th of August.

The *Jefferson* reached Cote Sans Dessain, the *Johnson* almost to the mouth of the Kansas River, and the *Expedition* to Cow Island. The boats each drew over six feet of water, and in many places were hardly able to stem the current. In the following spring (1820) the *Johnson* and the *Expedition* descended to St. Louis, generally dropping down stern foremost.

A directory of the City of Cincinnati, published in 1819, gives the following account of the early navigation of the Missouri River:

"The *Expedition*, 120 tons, and the *Independence*, 50 tons, built near Pittsburg, are both destined for the same voyage of discovery, the *Independence* being the first steamboat which has undertaken to stem the powerful current of the Missouri.

"They both arrived at Franklin (Boon's Lick), Howard County, 200 miles up the Missouri from its mouth, in the month of June last. It is now ascertained, beyond a doubt, that this important and extensive river, for several hundred miles at least, can be navigated by steamboats with the same ease and facility as the waters of the Ohio or Mississippi. Several keel boats have already descended the Missouri, from Franklin, with cargoes destined for New Orleans."

The *Johnson* went on to Louisville, and the *Expedition* to Council Bluffs, after undergoing thorough repairs. On this trip to Council Bluffs, there was a boat called the *Western Engine*, with an exploring party on board, headed by Major S. H. Long. This boat had a figure-head made to resemble a *snake*, through which the steam escaped in front, designed to intimidate the Indians. The *Western Engine* led the way, and reached Council Bluffs ahead of the others. These were the first boats that passed up the Missouri.

The St. Louis *Enquirer* of April, 1819, says:

"The *Expedition*, on her way to the Council Bluffs, carrying supplies to the troops, passed Boon's Lick on the 8th day after leaving St. Louis, and was going on well.

"The *Calhoun*, ascending the Upper Mississippi, to the Falls of St. Anthony, passed Clarksville (150 miles above St. Louis) on the second day after her departure. ☞ This is the first steamboat that has ever ran from St. Louis to the Falls of St. Anthony. She was expected to make the voyage up in 12 days, distance 900 to 1000 miles.

"The *Comet*, on her way from New Orleans to Louisville, in May, ran up the Arkansas to the town of Arkansas. ☞ She is the first steamboat which has ascended that river."

In 1819 the *St. Louis* came out as a regular trader between St. Louis and New Orleans, commanded by Capt. Hughes, rigged with a mast, top-mast, and sails, to be used in case of wind.

About 1818 the *Maid of Orleans* was built in New York, and sent round to New Orleans, which place she left for St. Louis in the spring of 1819. She was nearly a year in making the voyage, and of the whole crew who started, but one lived to reach the end of the voyage; all the others having died of yellow fever.

In 1822 the *Calhoun* was put into the St. Louis and Louisville trade—the pioneer boat.

The first navigation of Grand River was by the steamer *Falcon*, Capt. W. H. Parkinson, in April, 1849. She was 156 feet long, 300 tons, and went up to Utica and Chillicothe. The *Lake of the Woods*, about the same size, made several trips the same season.

The first navigation of the Mississippi, above St. Anthony's Falls, was by the *Governor Rumsey*, which was built there in the winter of 1849–50, and left the Falls on her first trip May 25th, 1850, since which time a regular trade is carried on between the Falls and Sauk Rapids.

The following table exhibits the number of steamers built in the United States, from the introduction of steam navigation to the present time; also the number built upon western rivers since 1844:

Year.	U. S.	Western Rivers.	Year.	U. S.	Western Rivers.
1823	15	.....	1845	163	132
1824	26	.....	1846	225	137
1825	35	.....	1847	198	234
1826	45	.....	1848	175	211
1827	38	.....	1849	208	164
1828	33	.....	1850	159	111
1829	43	.....	1851	233	181
1830	37	.....	1852	259	209
1831	34	.....	1853	271	130
1832	100	.....	1854	281	168
1833	65	.....	1855	253	115
1834	68	.....	1856	221	116
1835	30	.....	1857	263	157
1836	124	.....	1858	226	115
1837	135	.....	1859	172	87
1838	90	.....	1860	264	145
1839	125	.....	1861	261	149
1840	64	.....	1862	183	44
1841	78	.....	1863	367	118
1842	137	.....	1864	498	208
1843	79	.....	1865	.....	191
1844	163	.....	1866	.....	.....

THE EMANCIPATION ORDINANCE.

The following is the Emancipation Ordinance and the votes taken on its final passage in the State Convention, on Tuesday, the 11th day of January, 1865. It is a noble record, and one that in the future history of our State will be regarded with the profoundest admiration and gratitude.

An Ordinance Abolishing Slavery in Missouri.

Be it ordained by the people of the State of Missouri in Convention assembled:

That hereafter in this State there shall be neither slavery nor involuntary servitude, except in punishment of crime, whereof the party shall have been duly convicted; and all persons held to service or labor as slaves, are hereby *declared free.*

AYES.

W. B. Adams, Montgomery.
A. M. Bedford, Mississippi.
David Bonham, Andrew.
Geo. K. Budd, St. Louis.
Harvey Bunce, Cooper.
Isador Bush, St. Louis.
R. L. Childress, Webster.
Henry A. Clover, St. Louis.
R. C. Rowden, Polk.
Samuel T. Davis, New Madrid.
John H. Davis, Nodaway.
Isham B. Bodson, Adair.
Wm. D. D'Oench, St. Louis.
Charles D. Drake, St. Louis.
John H. Ellis, Livingston.
John Esther, Laclede.
Ellis G. Evans, Crawford.
Chauncey I. Filley, St. Louis.
J. W. Fletcher, Jefferson.
Wm. H. Folsombee, Davis.
F. M. Fulkerson, Saline.
Emory S. Foster, Johnson.
John W. Gamble, Audrain.
Archibald Gilbert, Lawrence.
Abner L. Gilstrap, Macon.
Moses P. Green, Marion.
J. M. Grammer, Barry.
David Henderson, Dent.
E. A. Holcomb, Chariton.
John H. Holdsworth, Monroe.
W. S. Holland, Calhoun.
R. F. Hughes, Pettis.
J. F. Hume, Moniteau.
Geo. Husmann, Gasconade.
Wyllis King, St. Louis.
R. Leonard, Howard.
M. L. Linton, St. Louis.
U. F. McKernan, Cole.
R. M. McPherson, Perry.
John A. Mack, Green.
A. H. Martin, Lincoln.
Ferdinand Meyer, St. Louis.
James P. Mitchell, Lewis.
A. G. Newgent, Jackson.
A. P. Nixdorf, Miller.
James W. Owens, Franklin.
D. Peck, Iron.
J. T. Rankin, Dade.
Philip Rohrer, Cedar.
G. St. Gemme, Ste. Genevieve.
K. G. Smith, Mercer.
Eli Smith, Worth.
Geo. P. Strong, St. Louis.
Joseph Sutton, Wayne.
John B. Swearinger, Jackson.
J. C. Thilenius, Cape Girardeau.
S. W. Weatherby, Buchanan.
Jeremiah Williams, Caldwell.
Eugene Williams, Caldwell.
Arnold Krekel, St. Charles.

NAYS.

Samuel A. Gilbert, Platte.
Thomas B. Harris, Callaway.
William A. Martin, Clay.
William F. Switzler, Boone.

CONSTITUTION

OF THE

STATE OF MISSOURI,

AS REVISED, AMENDED, AND ADOPTED, IN CONVENTION BEGUN AND HELD AT THE CITY OF ST. LOUIS, ON THE SIXTH DAY OF JANUARY, 1865.

We, the people of the State of Missouri, grateful to Almighty God, the Sovereign Ruler of Nations, for our State Government, our liberties, and our connection with the American Union, and acknowledging our dependence upon Him for the continuance of those blessings to us and our posterity, do, for the more certain security thereof, and for the better government of this State, ordain and establish this revised and amended Constitution:

ARTICLE I.

DECLARATION OF RIGHTS.

That the general, great, and essential principles of liberty and free government may be recognized and established, and that the relations of this State to the Union and Government of the United States, and those of the people of this State to the rest of the American people, may be defined and affirmed, we do declare—

1. That we hold it to be self-evident that all men are endowed by their Creator with certain inalienable rights, among which are life, liberty, the enjoyment of the fruits of their own labor, and the pursuit of happiness.

2. That there cannot be in this State either slavery or involuntary servitude, except in punishment of crime, whereof the party shall have been duly convicted.

3. That no person can, on account of color, be disqualified as a witness, or be disabled to contract, otherwise than as others are disabled; or be prevented from acquiring, holding, and transmitting property; or be liable to any other punishment for any offense than that imposed upon others for a like offense; or be restricted in the exercise of religious worship; or be hindered in acquiring education; or be subjected, in law, to any other restraints or disqualifications, in regard to any personal rights, than such as are laid upon others under like circumstances.

4. That all political power is vested in and derived from the people; that all government of right originates from the people, is founded upon their will only, and is instituted solely for the good of the whole.

5. That the people of this State have the inherent, sole, and exclusive right of regulating the internal government and police thereof, and of altering and abolishing their constitution and form of government, whenever it may be necessary to their safety and happiness; but every such right should be exercised in pursuance of law, and consistently with the Constitution of the United States.

6. That this State shall ever remain a member of the American Union; that the people thereof are a part of the American nation; and that all attempts, from whatever source or upon whatever pretext, to dissolve said Union, or to sever said nation, ought to be resisted with the whole power of the State.

7. That every citizen of this State owes paramount allegiance to the Constitution and Government of the United States, and that no law or ordinance of this State in contravention or subversion thereof, can have any binding force.

8. That the people have the right peaceably to assemble for their common good, and to apply to those vested with the powers of government for redress of grievances, by petition or remonstrance; and that their right to bear arms in defense of themselves and of the lawful authority of the State cannot be questioned.

9. That all men have a natural and indefeasible right to worship Almighty God according to the dictates of their own consciences; that no person can, on account of his religious opinions, be rendered ineligible to any office of trust or profit under this State, nor be disqualified from testifying, or from serving as a juror; that no human authority can control or interfere with the rights of conscience; and that no person ought, by any law, to be molested in his person or estate, on account of his religious persuasion or profession; but the liberty of conscience hereby secured shall not be so construed as to excuse acts of licentiousness, nor to justify practices inconsistent with the good order, peace or safety of the State, or with the rights of others.

10. That no person can be compelled to erect, support, or attend any place of worship, or to maintain any minister of the Gospel, or teacher of religion; but whatever contracts any person may enter into for any such object ought, in law, to be binding and capable of enforcement as other contracts.

11. That no preference can ever be given, by law, to any church, sect, or mode of worship.

12. That no religious corporation can be established in this State, except that by a general law, uniform throughout the State, any church or religious society or congregation may become a body corporate, for the sole purpose of acquiring, holding, using, and disposing of so much land as may be required for a house of public worship, a chapel, a parsonage, and a burial ground, and managing the same, and contracting in relation to such land, and the buildings thereon, through a board of trustees, selected by themselves; but the quantity of land to be held by any such body corporate, in connection with a house of

worship or a parsonage, shall not exceed five acres in the country, or one acre in a town or city.

13. That every gift, sale, or devise of land to any minister, public teacher, or preacher of the Gospel, as such, or to any religious sect, order, or denomination; or to, or for the support, use, or benefit of, or in trust for, any minister, public teacher, or preacher of the Gospel, as such, or any religious sect, order, or denomination; and every gift or sale of goods or chattels to go in succession, or to take place after the death of the seller or donor, to or for such support, use, or benefit; and also every devise of goods or chattels, to or for the support, use, or benefit of any minister, public teacher, or preacher of the Gospel, as such, or any religious sect, order, or denomination, shall be void; except always any gift, sale or devise, of land to a church, religious society or congregation, or to any person or persons in trust for the use of a church, religious society or congregation, whether incorporated or not, for the uses and purposes, and within the limitations of the next preceding clause of this article.

14. That all elections ought to be free and open.

15. That courts of justice ought to be open to every person, and certain remedy afforded for every injury to person, property, or character; and that right and justice ought to be administered without sale, denial or delay.

16. That no private property ought to be taken or applied to public use, without just compensation.

17. That the right of trial by jury shall remain inviolate.

18. That in all criminal prosecutions the accused has the right to be heard by himself and his counsel; to demand the nature and cause of accusation; to have compulsory process for witnesses in his favor; to meet the witnesses against him face to face; and, in prosecutions on presentment or indictment, to a speedy trial by an impartial jury of the vicinage; that the accused cannot be compelled to give evidence against himself, nor be deprived of life, liberty, or property, but by the judgment of his peers, or the law of the land.

19. That no person, after having been once acquitted by a jury, can, for the same offense, be again put in jeopardy of life or liberty; but if, in any criminal prosecution, the jury be divided in opinion, the court before which the trial shall be had may, in its discretion, discharge the jury, and commit or bail the accused for trial at the next term of said court.

20. That all persons shall be bailable by sufficient sureties, except for capital offenses, when the proof is evident or the presumption great.

21. That excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

22. That the privilege of the writ of *habeas corpus* cannot be suspended, unless when, in cases of rebellion or invasion, the public safety may require it.

23. That the people ought to be secure in their persons, papers, houses, and effects, from unreasonable searches and seizures; and no warrant to search any place, or seize any person or thing, can issue without describing the place to be searched, or the person or thing to

be seized, as nearly as may be; nor without probable cause, supported by oath or affirmation.

24. That no person can, for an indictable offense, be proceeded against criminally by information, except in cases arising in the land or naval forces, or in the militia when in actual service in the time of war or public danger, or by leave of court, for oppression or misdemeanor in office.

25. That treason against the State can consist only in levying war against it, or in adhering to its enemies, giving them aid and comfort.

26. That no person can be attainted of treason or felony by the General Assembly; that no conviction can work corruption of blood; that there can be no forfeiture of estate for any crime except treason; and that the estates of such persons as may destroy their own lives shall descend or vest, as in cases of natural death.

27. That the free communication of thoughts and opinions is one of the invaluable rights of man, and that every person may freely speak, write, and print on any subject, being responsible for the abuse of that liberty; that in all prosecutions for libel, the truth thereof may be given in evidence, and the jury may determine the law and the facts, under the direction of the court.

28. That no *ex post facto* law, nor law impairing the obligation of contracts, or retrospective in its operation, can be passed.

29. That imprisonment for debt cannot exist in this State, except for fines or penalties imposed for violation of law.

30. That all property subject to taxation ought to be taxed in proportion to its value.

31. That no title of nobility, or hereditary emolument, privilege, or distinction, can be granted.

32. That the military is, and in all cases and at all times ought to be, in strict subordination to the civil power; that no soldier can, in time of peace, be quartered in any house without the consent of the owner; nor in time of war, but in such manner as may be prescribed by law; nor can any appropriation for the support of an army be made for a longer period than two years.

ARTICLE II.

RIGHT OF SUFFRAGE.

Section 1. All elections by the people shall be by ballot. No election shall continue longer than one day, except as provided in the twenty-first section of this article.

Sect. 2. General elections shall be held biennially, on the Tuesday next after the first Monday in November. The first general election under this Constitution shall be held on that day, in the year one thousand eight hundred and sixty-six. Should Congress direct the appointment of electors of President and Vice-President of the United States on any other day than that now established, the General Assembly may change the time of holding general elections, so as to provide for holding them on the day which may be designated by Congress

for that purpose, and on the corresponding day two years thereafter. No special election, State, county, or municipal, shall be appointed to be held on a Monday.

Sect. 3. At any election held by the people under this Constitution, or in pursuance of any law of this State, or under any ordinance or by-law of any municipal corporation, no person shall be deemed a qualified voter who has ever been in armed hostility to the United States, or to the lawful authorities thereof, or to the Government of this State; or has ever given aid, comfort, countenance, or support to persons engaged in any such hostility; or has ever, in any manner, adhered to the enemies, foreign or domestic, of the United States, either by contributing to them, or by unlawfully sending within their lines money, goods, letters, or information; or has ever disloyally held communication with such enemies; or has ever advised or aided any person to enter the service of such enemies; or has ever, by act or word, manifested his adherence to the cause of such enemies, or his desire for their triumph over the arms of the United States; or his sympathy with those engaged in exciting or carrying on rebellion against the United States; or has ever, except under overpowering compulsion, submitted to the authority, or been in the service of the so-called "Confederate States of America;" or has ever left this State and gone within the lines of the armies of the so-called "Confederate States of America," with the purpose of adhering to said States or armies; or has ever been a member of, or connected with, any order, society or organization, inimical to the Government of the United States, or to the Government of this State; or has ever been engaged in guerrilla warfare against loyal inhabitants of the United States, or in that description of marauding commonly known as "bushwhacking;" or has ever knowingly and willingly harbored, aided, or countenanced any person so engaged; or has ever come into or left this State for the purpose of avoiding enrollment for or draft into the military service of the United States; or has ever, with a view to avoid enrollment in the militia of this State, or to escape the performance of duty therein, or for any other purpose, enrolled himself, or authorized himself to be enrolled, by or before any officer, as disloyal or as a Southern sympathizer; or in any other terms indicating his disaffection to the Government of the United States in its contest with rebellion, or his sympathy with those engaged in such rebellion; or, having ever voted at any election by the people in this State, or in any other of the United States, or in any of their Territories, or held office in this State, or in any other of the United States, or in any of their Territories, or under the United States, shall thereafter have sought or received, under claim of alienage, the protection of any foreign government, through any consul or other officer thereof, in order to secure exemption from military duty in the militia of this State, or in the army of the United States; nor shall any such person be capable of holding in this State any office of honor, trust, or profit under its authority; or of being an officer, councilman, director, trustee, or other manager of any corporation, public or private, now existing or hereafter established by its authority; or of acting as a professor or teacher in any educational institution, or in any common or other school; or

of holding any real estate or other property in trust for the use of any church, religious society or congregation. But the foregoing provisions in relation to acts done against the United States shall not apply to any person not a citizen thereof, who shall have committed such acts while in the service of some foreign country at war with the United States, and who has, since such acts, been naturalized, or may hereafter be naturalized, under the laws of the United States; and the oath of loyalty hereinafter prescribed, when taken by any such person, shall be considered as taken in such sense.

Sect. 4. The General Assembly shall immediately provide by law for a complete and uniform registration, by election districts, of the names of qualified voters in this State; which registration shall be evidence of the qualification of all registered voters to vote at any election thereafter held, but no person shall be excluded from voting at any election on account of not being registered until the General Assembly shall have passed an act of registration, and the same shall have been carried into effect; after which no person shall vote unless his name shall have been registered at least ten days before the day of the election; and the fact of such registration shall be no otherwise shown than by the register, or an authentic copy thereof, certified to the judges of election by the registering officer or officers, or other constituted authority. A new registration shall be made within sixty days next preceding the tenth day prior to every biennial general election; and after it shall have been made, no person shall establish his right to vote by the fact of his name appearing on any previous register.

Sect. 5. Until such a system of registration shall have been established, every person shall, at the time of offering to vote, and before his vote shall be received, take an oath in the terms prescribed in the next succeeding section. After such a system shall have been established, the said oath shall be taken and subscribed by the voter at each time of his registration. Any person declining to take said oath shall not be allowed to vote, or to be registered as a qualified voter. The taking thereof shall not be deemed conclusive evidence of the right of the person to vote, or to be registered as a voter; but such right may, notwithstanding, be disproved. And after a system of registration shall have been established, all evidence for and against the right of any person as a qualified voter, shall be heard and passed upon by the registering officer or officers, and not by the judges of election. The registering officer or officers shall keep a register of the names of persons rejected as voters, and the same shall be certified to the judges of election; and they shall receive the ballot of any such rejected voter offering to vote, marking the same, and certifying the vote thereby given, as rejected; but no such vote shall be received unless the party offering it take, at the time, the oath of loyalty hereinafter prescribed.

Sect. 6. The oath to be taken as aforesaid shall be known as the Oath of Loyalty, and shall be in the following terms:

"I, A. B, do solemnly swear that I am well acquainted with the terms of the third section of the second article of the Constitution of the State of Missouri, adopted in the year eighteen hundred and sixty

five, and have carefully considered the same; that I have never, directly or indirectly, done any of the acts in said section specified; that I have always been truly and loyally on the side of the United States against all enemies thereof, foreign and domestic; that I will bear true faith and allegiance to the United States, and will support the Constitution and laws thereof as the supreme law of the land, any law or ordinance of any State to the contrary notwithstanding; that I will, to the best of my ability, protect and defend the Union of the United States, and not allow the same to be broken up and dissolved, or the government thereof to be destroyed or overthrown, under any circumstances, if in my power to prevent it; that I will support the Constitution of the State of Missouri; and that I make this oath without any mental reservation or evasion, and hold it to be binding on me."

Sect. 7. Within sixty days after this Constitution takes effect, every person in this State holding any office of honor, trust, or profit, under the Constitution or laws thereof, under any municipal corporation, or any of the other offices, positions, or trusts mentioned in the third section of this article, shall take and subscribe the said oath. If any officer or person referred to in this section shall fail to comply with the requirements thereof, his office, position, or trust shall, *ipso facto*, become vacant, and the vacancy shall be filled according to the law governing the case.

Sect. 8. No vote in any election by the people shall be cast up for, nor shall any certificate of election be granted to, any person who shall not, within fifteen days next preceding such election, have taken, subscribed and filed said oath.

Sect. 9. No person shall assume the duties of any State, county, city, town, or other office, to which he may be appointed, otherwise than by a vote of the people; nor shall any person, after the expiration of sixty days after this Constitution takes effect, be permitted to practice as an attorney or counselor at law; nor, after that time, shall any person be competent as a bishop, priest, deacon, minister, elder, or other clergyman of any religious persuasion, sect or denomination, to teach or preach or solemnize marriages, unless such person shall have first taken, subscribed and filed said oath.

Sect. 10. Oaths taken in pursuance of the seventh, eighth, and ninth sections of this article, shall be filed as follows: By a State civil officer, or a candidate for a State civil office, and by members and officers of the present General Assembly, in the office of the Secretary of State; by a military officer in the office of the Adjutant-General; by a candidate for either house of the General Assembly in the clerk's office of the county court of the county of his residence, or in that of the county where the vote of the district is required by law to be cast up, and the certificate of election granted; by a city or town officer in the office where the archives of such city or town are kept; and in all other cases, in the office of the clerk of the county court of the county of the person's residence.

Sect. 11. Every court in which any person shall be summoned to serve as a grand or petit juror, shall require him, before he is sworn

as a juror, to take said oath, in open court; and no person refusing to take the same shall serve as a juror.

Sect. 12. If any person shall declare that he has conscientious scruples against taking an oath, or swearing in any form, the said oath may be changed into a solemn affirmation, and be made by him in that form.

Sect. 13. In addition to the oath of loyalty aforesaid, every person who may be elected or appointed to any office shall, before entering upon its duties, take and subscribe an oath or affirmation that he will, to the best of his skill and ability, diligently and faithfully, without partiality or prejudice, discharge the duties of such office according to the Constitution and laws of this State.

Sect. 14. Whoever shall, after the times limited in the seventh and ninth sections of this article, hold or exercise any of the offices, positions, trusts, professions or functions therein specified, without having taken, subscribed and filed said oath of loyalty, shall, on conviction thereof, be punished by fine, not less than five hundred dollars, or by imprisonment in the county jail not less than six months, or by both such fine and imprisonment; and whoever shall take said oath falsely, by swearing or by affirmation, shall, on conviction thereof, be adjudged guilty of perjury, and be punished by imprisonment in the penitentiary not less than two years.

Sect. 15. Whoever shall be convicted of having, directly or indirectly, given or offered any bribe, to procure his election or appointment to any office, shall be disqualified for any office of honor, trust, or profit under this State; and whoever shall give or offer any bribe to procure the election or appointment of any other person to any office, shall, on conviction thereof, be disqualified for a voter, or any office of honor, trust or profit under this State, for ten years after such conviction.

Sect. 16. No officer, soldier, or marine in the regular army or navy of the United States, shall be entitled to vote at any election in this State.

Sect. 17. No person who shall make, or become, directly or indirectly, interested in, any bet or wager depending upon the result of any election, shall vote at such election.

Sect. 18. Every white male citizen of the United States, and every white male person of foreign birth who may have declared his intention to become a citizen of the United States, according to law, not less than one year nor more than five years before he offers to vote, who is over the age of twenty-one years, who is not disqualified by or under any of the provisions of this Constitution, and who shall have complied with its requirements, and have resided in this State one year next preceding any election, or next preceding his registration as a voter, and during the last sixty days of that period shall have resided in the county, city, or town where he offers to vote, or seeks registration as a voter, shall be entitled to vote at such election for all officers, State, county, or municipal, made elective by the people; but he shall not vote elsewhere than in the election district of which he is at the time a resident, or, after a system of registration of votes shall have been established, in the election district where his name is

registered; except as provided in the twenty-first section of this article.

Sect. 19. After the first day of January, one thousand eight hundred and seventy-six, every person who was not a qualified voter prior to that time, shall, in addition to the other qualifications required, be able to read and write, in order to become a qualified voter; unless his inability to read or write shall be the result of a physical debility.

Sect. 20. For the purpose of voting, no person shall be deemed to have gained or lost a residence by reason of his presence or absence while employed in the service of the United States, nor while engaged in the navigation of the waters of this State, or of the United States, or of the high seas; nor while a student in any seminary of learning; nor while kept at any poor-house, or other asylum, at public expense; nor while confined in any public prison.

Sect. 21. Any qualified voter, under the eighteenth section of this article, who may be absent from the place of his residence, by reason of being in the volunteer army of the United States, or in the militia force of this State, in the service thereof, or of the United States, whether within or without the State, shall, without registration, be entitled to vote in any election occurring during such absence. The votes of all such persons, wherever they may be, may be taken on the day fixed by law for such election, or on any day or days within twenty days next prior thereto; and the General Assembly shall provide by law for the taking, return, and counting of such votes. Every such person shall take the same oath that all other voters may be required to take, in order to vote.

Sect. 22. Voters shall, in all cases except treason, felony, or breach of the peace, be privileged from arrest during their continuance at elections, and in going to and returning from the same.

Sect. 23. Any person who may at any time have done any act which, under the third section of this article, has disqualified or may disqualify him, as therein expressed, and who shall, after the commission of such act, have voluntarily entered the military service of the United States, and have been honorably discharged therefrom, and after such discharge have demeaned himself in all respects as a loyal and faithful citizen, may be relieved from such disqualification. In order thereto, he shall, in person, present his petition to the circuit court of the county of his residence, stating specifically the act or acts which produced such disqualification, and the grounds upon which he prays to be relieved therefrom; and the court shall set a day for hearing the cause, not less than five days after the presentation of the petition; when, if it appear by competent proof that the petitioner is justly entitled to the relief prayed for, the court shall make a decree removing such disqualification. But any act done by such person after the date of such decree, which would impose a disqualification under said third section of this article, shall make such decree null and void, and remit him to his previous condition of disqualification; and no such decree shall be granted a second time in his favor.

Sect. 24. After any person shall have been so relieved by the decree of a circuit court, he shall, in order to vote, or hold any of the offices,

positions, or trusts, or exercise any of the privileges or functions hereinbefore specified, take the oath of loyalty aforesaid, except the part thereof which refers to the third section of this article and to the past acts or loyalty of the person taking the oath.

Sect. 25. After the first day of January, one thousand eight hundred and seventy-one, and until the date hereinafter named, the General Assembly shall have power, if a majority of all the members elected to both houses concur therein, to suspend or repeal any part of the third, fifth, and sixth sections of this article, so far as the same relate to the qualifications of voters, but no further. After the first day of January, one thousand eight hundred and seventy-five, the General Assembly may wholly suspend or repeal the third, fourth, fifth, sixth, eighth, ninth, tenth, eleventh, and twelfth sections of this article, or any part thereof, if a like majority of both houses concur therein. But no such suspension or repeal shall have the effect of dispensing with the taking, by every person elected or appointed to any office in this State, of so much of the oath of loyalty aforesaid as follows the word "domestic." On the passage of any bill suspending or repealing any of said sections, or any part thereof, the votes of both houses shall be taken by yeas and nays, and entered on the journals of the houses, respectively. The General Assembly shall also have power, at any time, to remove any such suspension or repeal, and reinstate the provisions suspended or repealed, in full force and effect as a part of this Constitution. Every suspension or repeal made in pursuance of this section shall be general in its terms, and not in any case in favor of any named person; but the General Assembly may except from the benefit of such suspension or repeal any person, or class of persons, it may see fit.

Sect. 26. The General Assembly shall provide for the exclusion from every office of honor, trust, or profit within this State, and from the right of suffrage, of any person convicted of bribery, perjury, or other infamous crime.

ARTICLE III.

DISTRIBUTION OF POWERS.

The powers of government shall be divided into three distinct departments, each of which shall be confided to a separate magistracy; and no person charged with the exercise of powers properly belonging to one of those departments shall exercise any power properly belonging to either of the others, except in the instances hereinafter expressly directed or permitted.

ARTICLE IV.

LEGISLATIVE DEPARTMENT.

Section 1. The legislative power shall be vested in a General Assembly, which shall consist of a Senate and House of Representatives.

Sect. 2. The House of Representatives shall consist of members, to be chosen every second year by the qualified voters of the several counties, and apportioned in the following manner:

The ratio of representation shall be ascertained at each apportioning session of the General Assembly, by dividing the whole number of permanent inhabitants of the State by the number two hundred. Each county having one ratio or less shall be entitled to one Representative; each county having three times said ratio shall be entitled to two Representatives; each county having six times said ratio shall be entitled to three Representatives; and so on above that number, giving one additional member for every three additional ratios. When any county shall be entitled to more than one Representative, the county court shall cause said county to be subdivided into as many compact and convenient districts as such county may be entitled to Representatives; which districts shall be, as near as may be, of equal population; and the qualified voters of each of such districts shall elect one Representative, who shall be a resident of such district.

Sect. 3. No person shall be a member of the House of Representatives who shall not have attained the age of twenty-four years, who shall not be a white male citizen of the United States, who shall not have been a qualified voter of this State two years, and an inhabitant of the county which he may be chosen to represent one year next before the day of his election, if such county shall have been so long established; but if not, then of the county from which the same shall have been taken; and who shall not have paid a State and county tax.

Sect. 4. The Senate shall consist of thirty-four members, to be chosen by the qualified voters for four years, for the election of whom the State shall be divided into convenient districts.

Sect. 5. No person shall be a Senator who shall not have attained the age of thirty years; who shall not be a white male citizen of the United States; who shall not have been a qualified voter of this State three years, and an inhabitant of the district which he may be chosen to represent one year next before the day of his election, if such district shall have been so long established, but if not, then of the district or districts from which the same shall have been taken; and who shall not have paid a State and county tax. When any county shall be entitled to more than one Senator, the county court shall cause such county to be subdivided into as many compact and convenient districts as such county may be entitled to Senators; which districts shall be, as near as may be, of equal population; and the qualified voters of each of such districts shall elect one Senator, who shall be a resident of such district.

Sect. 6. Senators shall be apportioned among their respective districts, as nearly as may be, according to the number of permanent inhabitants in each.

Sect. 7. Senators and Representatives shall be chosen according to the rule of apportionment established in this Constitution, until the next decennial census taken by the United States shall have been made, and the result thereof as to this State ascertained, when the apportionment shall be revised and adjusted on the basis of that census. In the year one thousand eight hundred and seventy-six, and

every tenth year thereafter, there shall be taken, under the authority of this State, a census of the inhabitants thereof; and after every such census the apportionment of Senators and Representatives may be based thereon, until the next succeeding National census; after which it may be based upon the National census until the next succeeding decennial State census; and so on, from time to time, the enumerations made by the United States and this State shall be used, as they respectively occur, as the basis of apportionment.

Sect. 8. Senatorial and Representative districts may be altered, from time to time, as public convenience may require. When any senatorial district shall be composed of two or more counties, they shall be contiguous.

Sect. 9. The first election of Senators and Representatives under this Constitution shall be held at the general election in the year one thousand eight hundred and sixty-six, when the whole number of Senators and Representatives shall be chosen.

Sect. 10. At the regular session of the General Assembly chosen at said election, the Senators shall be divided into two equal classes. Those elected from districts bearing odd numbers shall compose the first class, and those elected from districts bearing even numbers shall compose the second class. The seats of the first class shall be vacated at the end of the second year after the day of said election, and those of the second class at the end of the fourth year after that day, so that one-half of the Senators shall be chosen every second year. In districting any county for the election of Senators, the districts shall be numbered, so as to effectuate the division of Senators into classes, as required in this section.

Sect. 11. No member of Congress, or person holding any lucrative office under the United States or this State (militia officers, justices of the peace, and notaries public excepted), shall be eligible to either house of the General Assembly, or shall remain a member thereof after having accepted any such office, or a seat in either house of Congress.

Sect. 12. No person who now is, or may hereafter be a collector or holder of public money, or assistant or deputy of such collector or holder of public money, shall be eligible to either house of the General Assembly until he shall have accounted for, and paid all sums for which he may be accountable.

Sect. 13. If any Senator or Representative remove his residence from the district or county for which he was elected, his office shall thereby be vacated.

Sect. 14. The Governor shall issue writs of election to fill such vacancies as may occur in either house of the General Assembly.

Sect. 15. No Senator or Representative shall, during the term for which he shall have been elected, be appointed to any civil office under this State, which shall have been created, or the emoluments of which shall have been increased, during his continuance in office, as a Senator or Representative, except to such offices as shall be filled by elections of the people.

Sect. 16. Senators and Representatives shall, in all cases, except treason, felony, or breach of the peace, be privileged from arrest, dur-

ing the session of the General Assembly, and for fifteen days next before the commencement and after the termination of each session; and for any speech or debate in either house, they shall not be questioned in any other place.

Sect. 17. The members of the General Assembly shall severally receive from the public Treasury such compensation for their services as may, from time to time, be provided by law; but no law increasing such compensation shall take effect in favor of the members of the General Assembly by which the same shall have been passed.

Sect. 18. A majority of the whole number of members of each house shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may compel the attendance of absent members, in such manner and under such penalties as each house may provide.

Sect. 19. Each house shall appoint its own officers; shall judge of the qualifications, elections, and returns of its own members; may determine rules of its proceedings; may arrest and punish by fine, not exceeding three hundred dollars, or by imprisonment in a county jail not exceeding ten days, or both, any person not a member, who shall be guilty of disrespect to the house, by any disorderly or contemptuous behavior in its presence, during its session; may punish its members for disorderly behavior; and, with the concurrence of two-thirds of all the members elected, may expel a member; but no member shall be expelled a second time for the same cause.

Sect. 20. Each house shall, from time to time, publish a journal of its proceedings, except such parts thereof as may, in its opinion, require secrecy; and the yeas and nays on any question shall be taken, and entered on the journal, at the desire of any two members. Whenever the yeas and nays are demanded, the whole list of members shall be called, and the names of absentees shall be noted, and published with the journal.

Sect. 21. The sessions of each house shall be held with open doors, except in cases which may require secrecy.

Sect. 22. Neither house shall, without the consent of the other, adjourn for more than two days at any one time, nor to any other place than that in which the two houses may be sitting.

Sect. 23. Bills may originate in either house, and may be altered, amended, or rejected by the other; and every bill shall be read on three different days in each house, unless two-thirds of the house, where the same is pending, shall dispense with this rule; and every bill, having passed both houses shall be signed by the Speaker of the House of Representatives, and by the President of the Senate.

Sect. 24. No bill shall be passed unless by the majority of all the members elected to each branch of the General Assembly; and the question upon the final passage shall be taken immediately upon the last reading; and the yeas and nays shall be taken thereon and entered upon the journal.

Sect. 25. No act shall be revived or re-enacted by mere reference to the title thereof; nor shall any act be amended by providing that designated words thereof shall be struck out; or that designated words shall be struck out and others inserted in lieu thereof; but in every

such case the act revived or re-enacted, or the act or part of act amended shall be set forth and published at length, as if it were an original act or provision.

Sect. 26. The style of the laws of this State shall be—"Be it enacted by the General Assembly of the State of Missouri, as follows:"

Sect. 27. The General Assembly shall not pass special laws divorcing any named parties; or declaring any named person of age; or authorizing any named minor to sell, lease, or encumber his or her property; or providing for the sale of the real estate of any named minor or other person, laboring under legal disability, by any executor, administrator, guardian, trustee, or other person; or changing the name of any person; or establishing, locating, altering the course, or affecting the construction of roads, or the building or repairing of bridges; or establishing, altering, or vacating any street, avenue, or alley, in any city or town; or extending the time for the assessment or collection of taxes, or otherwise relieving any assessor or collector of taxes from the due performance of his official duties; or giving effect to informal or invalid wills or deeds; or legalizing, except as against the State, the unauthorized or invalid acts of any officer; or granting to any individual or company the right to lay down railroad tracks in the streets of any city or town; or exempting any property of any named person or corporation from taxation. The General Assembly shall pass no special law for any case for which provision can be made by a general law; but shall pass general laws providing, so far as it may deem necessary, for the cases enumerated in this section, and for all other cases where a general law can be made applicable.

Sect. 28. The General Assembly shall never authorize any lottery; nor shall the sale of lottery tickets be allowed; nor shall any lottery heretofore authorized be permitted to be drawn, or tickets therein to be sold.

Sect. 29. The General Assembly shall have no power to make compensation for emancipated slaves.

Sect. 30. The General Assembly shall have no power to remove the county-seat of any county, unless two-thirds of the qualified voters of the county, at a general election, shall vote in favor of such removal. No compensation or indemnity for real estate, or the improvements thereon, affected by such removal, shall be allowed.

Sect. 31. The General Assembly shall have no power to establish any new county with a territory of less than five hundred square miles, or with a population less than the ratio of representation existing at the time; nor to reduce any county now established to less than that area, or to less population than such ratio.

Sect. 32. No law enacted by the General Assembly shall relate to more than one subject, and that shall be expressed in the title; but if any subject embraced in an act be not expressed in the title, such act shall be void only as to so much thereof as is not so expressed.

Sect. 33. The General Assembly shall direct, by law, in what manner, and in what courts, suits may be brought against the State.

Sect. 34. When any officer, civil or military, shall be appointed by the joint or concurrent vote of both houses, or by the separate vote of

either house, the votes shall be publicly given *viva voce*, and entered on the journals.

Sect. 35. The General Assembly elected in the year one thousand eight hundred and sixty-six, shall meet on the first Wednesday of January, one thousand eight hundred and sixty-seven; and thereafter the General Assembly shall meet in regular session once in every two years; and such meeting shall be on the first Wednesday of January, unless a different day be fixed by law.

ARTICLE V.

EXECUTIVE DEPARTMENT.

Section 1. The supreme executive power shall be vested in a Chief Magistrate, who shall be styled "The Governor of the State of Missouri."

Sect. 2. The Governor shall be at least thirty-five years old, a white male citizen of the United States ten years, and a resident of this State seven years next before his election.

Sect. 3. The Governor elected at the general election in the year one thousand eight hundred and sixty-eight, and each Governor thereafter elected, shall hold his office two years, and until a successor be duly elected and qualified. At the time and place of voting for members of the House of Representatives, the qualified voters shall vote for a Governor; and when two or more persons have an equal number of votes and a higher number than any other person, the election shall be decided between them by a joint vote of both houses of the General Assembly, at their next session.

Sect. 4. The Governor shall not be ineligible to office more than four years in six.

Sect. 5. The Governor shall be commander-in-chief of the militia of this State, except when they shall be called into the service of the United States; but he need not command in person, unless advised to do so by a resolution of the General Assembly.

Sect. 6. The Governor shall have the power to grant reprieves, commutations, and pardons, after conviction, for all offenses except treason and cases of impeachment, upon such conditions, and with such restrictions and limitations, as he may think proper, subject to such regulations as may be provided by law relative to the manner of applying for pardons. He shall, at each session of the General Assembly, communicate to that body each case of reprieve, commutation or pardon granted; stating the name of the convict, the crime of which he was convicted, the sentence and its date, the date of the commutation, pardon, or reprieve, and the reasons for granting the same. He shall take care that the laws be distributed and faithfully executed; and shall be a conservator of the peace throughout the State.

Sect. 7. The Governor shall, from time to time, give to the General Assembly information relative to the state of the Government, and shall recommend to their consideration such measures as he shall deem necessary and expedient. On extraordinary occasions he may convene

the General Assembly by proclamation, wherein he shall state specifically each matter concerning which the action of that body is deemed necessary; and the General Assembly shall have no power, when so convened, to act upon any matter not so stated in the proclamation.

Sect. 8. When any office shall become vacant, the Governor, unless otherwise provided by law, shall appoint a person to fill such vacancy, who shall continue in office until a successor shall be duly elected or appointed, and qualified according to law.

Sect. 9. Every bill which shall have been passed by both houses of the General Assembly, before it becomes a law shall be presented to the Governor for his approbation. If he approve, he shall sign it; if not, he shall return it, with his objections, to the house in which it shall have originated; and the house shall cause the objections to be entered at large on its journals, and shall proceed to reconsider the bill. After such reconsideration, if a majority of all the members elected to that house shall agree to pass the same, it shall be sent, together with the objections, to the other house, by which it shall, in like manner, be reconsidered; and if approved by a majority of all the members elected to that house, it shall become a law. In all such cases, the votes of both houses shall be taken by *yeas* and *nays*, and the names of the members voting, for and against the bill, shall be entered on the journals of each house respectively. If any bill shall not be returned by the Governor within ten days (Sundays excepted) after it shall have been presented to him, the same shall become a law, in like manner as if the Governor had signed it, unless the General Assembly, by its adjournment, shall prevent its return; in which case it shall not become a law, unless the Governor, after such adjournment, and within ten days after the bill was presented to him (Sundays excepted), shall sign and deposit the same in the office of the Secretary of State; in which case it shall become a law, in like manner as if it had been signed by him during the session of the General Assembly.

Sect. 10. Every resolution, to which the concurrence of the Senate and House of Representatives may be necessary, except on questions of adjournment, of going into joint session, and of amending this Constitution, shall be presented to the Governor; and, before the same shall take effect, shall be proceeded upon in the same manner as in the case of a bill.

Sect. 11. The Governor shall, at stated times, receive for his services an adequate salary, to be fixed by law; which shall neither be increased nor diminished during his continuance in office.

Sect. 12. There shall be a Lieutenant-Governor, who shall be elected at the same time, in the same manner, for the same term, and shall possess the same qualifications as the Governor.

Sect. 13. The Lieutenant-Governor, by virtue of his office, shall be President of the Senate. In committee of the whole, he may debate on all questions; and when there is an equal division, shall give the casting vote in the Senate, and also in joint vote of both houses.

Sect. 14. When the office of Governor shall become vacant, by death, resignation, removal from the State, removal from office, refusal to qualify, or otherwise, the Lieutenant-Governor shall perform

the duties, possess the powers, and receive the compensation of the Governor during the remainder of the term for which the Governor was elected. When the Governor is absent from the State, or is unable, from sickness, to perform his duties, or is under impeachment, the Lieutenant-Governor shall perform said duties, possess said powers, and receive said compensation, until the Governor return to the State, be enabled to resume his duties, or be acquitted. If there be no Lieutenant-Governor, or if he be absent from the State, disabled by sickness, or under impeachment, the President of the Senate *pro tempore*, or, in case of like absence or disability on his part, or of there being no President of the Senate *pro tempore*, the Speaker of the House of Representatives shall assume the office of Governor, in the same manner, and with the same powers and compensation as are prescribed in the case of the office devolving on the Lieutenant-Governor.

Sect. 15. The Lieutenant-Governor, or the President of the Senate *pro tempore*, while presiding in the Senate, shall receive the same compensation as shall be allowed to the Speaker of the House of Representatives.

Sect. 16. There shall be a Secretary of State, a State Auditor, a State Treasurer, and an Attorney-General, who shall be elected by the qualified voters of the State, at the same time, in the same manner, and for the same term of office as the Governor. No person shall be eligible to either of said offices, unless he be a white male citizen of the United States, and at least twenty-five years old, and shall have resided in this State five years next before his election. The Secretary of State, the State Auditor, the State Treasurer, and the Attorney-General, shall keep their respective offices at the seat of Government, and shall perform such duties as may be required of them by law.

Sect. 17. The returns of all elections of Governor, Lieutenant-Governor, and of other State officers, shall be made to the Secretary of State, in such manner as may be prescribed by law.

Sect. 18. Contested elections of Governor and Lieutenant-Governor shall be decided by joint vote of both houses of the General Assembly, in such manner as may be prescribed by law.

Sect. 19. Contested elections of Secretary of State, State Auditor, State Treasurer, and Attorney-General, shall be decided before such tribunal, and in such manner as may be by law provided.

Sect. 20 The Secretary of State shall be the custodian of the seal of State, and shall authenticate therewith all official acts of the Governor, his approbation of laws excepted. The said seal shall be called the "Great Seal of the State of Missouri;" and the emblems and devices thereof, heretofore prescribed by law, shall not be subject to change.

Sect. 21. The Secretary of State shall keep a register of the official acts of the Governor, and when necessary shall attest them; and shall lay copies of the same, together with copies of all papers relating thereto, before either house of the General Assembly, whenever required to do so.

Sect. 22. There shall be elected by the qualified voters in each

county, at the time and places of electing Representatives, a sheriff and a coroner. They shall serve for two years, and until a successor be duly elected and qualified, unless sooner removed for malfeasance in office, and shall be ineligible four years in any period of eight years. Before entering on the duties of their office, they shall give security in such amount and in such manner as shall be prescribed by law. Whenever a county shall be hereafter established, the Governor shall appoint a sheriff and a coroner therein, who shall continue in office until the next succeeding general election, and until a successor shall be duly elected and qualified.

Sect. 23. Whenever a vacancy shall happen in the office of sheriff or coroner, the same shall be filled by the county court. If such vacancy happen in the office of sheriff more than nine months prior to the time of holding a general election, such county court shall immediately order a special election to fill the same, and the person by it appointed shall hold office until the person chosen at such election shall be duly qualified; otherwise, the person appointed by such county court shall hold office until the person chosen at such general election shall be duly qualified. If a vacancy happen in the office of coroner, the same shall be filled for the remainder of the term by such county court. No person elected or appointed to fill a vacancy in either of said offices, shall thereby be rendered ineligible for the next succeeding term.

Sect. 24. In all elections for sheriff and coroner, when two or more persons have an equal number of votes, and a higher than any other person, the presiding judge of the county court of the county shall give the casting vote; and all contested elections for the said offices, shall be decided by the circuit court of the proper county, in such manner as the General Assembly may by law prescribe.

Sect. 25. The Governor shall commission all officers not otherwise provided by law. All commissions shall run in the name and by the authority of the State of Missouri, be sealed with the State seal, signed by the Governor, and attested by the Secretary of State.

Sect. 26. The appointment of all officers, not otherwise directed by this Constitution, shall be made in such manner as may be prescribed by law.

ARTICLE VI.

JUDICIAL DEPARTMENT.

Section 1. The judicial power, as to matters of law and equity, shall be vested in a supreme court, in district courts, in circuit courts, and in such inferior tribunals as the General Assembly may, from time to time, establish.

Sect. 2. The supreme court, except in cases otherwise directed by this Constitution, shall have appellate jurisdiction only, which shall be coextensive with the State, under the restrictions and limitations in this Constitution provided.

Sect. 3. The supreme court shall have a general superintending control over all inferior courts of law. It shall have power to issue

writs of *habeas corpus, mandamus, quo warranto, certiorari,* and other original remedial writs, and to hear and determine the same.

Sect. 4. The supreme court shall consist of three judges, any two of whom shall be a quorum; and the said judges shall be conservators of the peace throughout the State.

Sect. 5. The State shall be divided into convenient districts, not to exceed four, in each of which the supreme court shall be held at such time and place as the General Assembly may appoint, and, when sitting in either district, it shall exercise jurisdiction over causes originating in that district only; but the General Assembly may direct, by law, that the said court shall be held at one place only.

Sect. 6. The judges of the supreme court shall hold office for the term of six years, and until their successors shall be duly elected and qualified, except as hereinafter provided.

Sect. 7. At the general election, in the year one thousand eight hundred and sixty-eight, all the judges of the supreme court shall be elected by the qualified voters of the State, and shall enter upon their office on the first Monday of January next ensuing. At the first session of the court thereafter, the judges shall, by lot, determine the duration of their several terms of office, which shall be respectively two, four, and six years; and shall certify the result to the Secretary of State. At the general election, every two years after said first election, one judge of said court shall be elected, to hold office for the period of six years, from the first Monday of January next ensuing. The judge having at any time the shortest term to serve, shall be the presiding judge of the court.

Sect. 8. If a vacancy shall happen in the office of any judge of the supreme court, by death, resignation, removal out of the State, or other disqualification, the Governor shall appoint a suitable person to fill the vacancy until the next general election occurring more than three months after the happening of such vacancy, when the same shall be filled by election, by the qualified voters of the State, for the residue of the term.

Sect. 9. In case of a tie, or a contested election between the candidates, the same shall be determined in the manner prescribed by law.

Sect. 10. If, in regard to any cause pending in the supreme court, the judges sitting shall be equally divided in opinion, no judgment shall be entered therein based on such division; but the parties to the cause may agree upon some person, learned in the law, who shall act as special judge in the cause, and who shall therein sit with the court, and give decision in the same manner and with the same effect as one of the judges. If the parties cannot agree upon a special judge, the court shall appoint one.

Sect. 11. The judges of the supreme court shall give their opinion upon important questions of constitutional law, and upon solemn occasions, when required by the Governor, the Senate, or the House of Representatives; and all such opinions shall be published in connection with the reported decisions of said court.

Sect. 12. The State, except the County of St. Louis, shall be divided into not less than five districts, each of which shall embrace at least three judicial circuits; and in each district a court, to be known

as the district court, shall be held at such times and places as may be provided by law. Each district court shall be held by the judges of the circuit courts embraced in the district, a majority of whom shall be a quorum. The district courts shall, within their respective districts, have like original jurisdiction with the supreme court, and appellate jurisdiction from the final judgments of the circuit courts, and of all inferior courts of record within the district, except probate and county courts. After the establishment of such district courts, no appeal or writ of error shall lie from any circuit court, or inferior court of record, to the supreme court, but shall be prosecuted to the district court, from the final judgments of which an appeal or writ of error may be taken to the supreme court, in such cases as may be provided by law.

Sect. 13. The circuit court shall have jurisdiction over all criminal cases, which shall not be otherwise provided for by law; and exclusive original jurisdiction in all civil cases which shall not be cognizable before justices of the peace, until otherwise directed by the General Assembly. It shall hold its terms at such time and place, in each county, as may be by law directed.

Sect. 14. The State shall be divided into convenient circuits, of which the County of St. Louis shall constitute one, for each of which, except as in the next succeeding section specified, a judge shall be elected by the qualified voters of the respective circuits, and, except as hereinafter provided, shall be elected for the term of six years, but may continue in office until his successor shall be elected and qualified; and the judge of each circuit, after his election or appointment, as hereinafter provided, shall reside in and be a conservator of the peace within the circuit for which he shall be elected or appointed; and if any vacancy shall happen in the office of any circuit judge, by death, resignation, removal out of his circuit, or by any other disqualification, the Governor shall, upon being satisfied that a vacancy exists, issue a writ of election to fill such vacancy; provided that said vacancy shall happen at least six months before the next general election for said judge; but if such vacancy shall happen within six months of the general election aforesaid, the Governor shall appoint a judge for such circuit; but every election or appointment, to fill a vacancy, shall be for the residue of the term only. And the General Assembly shall provide, by law, for the election of said judges in their respective circuits; and, in case of a tie or contested election between the candidates, the same shall be determined in the manner to be prescribed by law. And the General Assembly shall provide, by law, for the election of said judges, in their respective circuits, to fill any vacancy which shall occur at any time at least six months before a general election for said judges. At the general election in the year one thousand eight hundred and sixty-eight, and at the general election every sixth year thereafter, except as hereinafter provided, all the circuit judges shall be elected, and shall enter upon their offices on the first Monday of January next ensuing. No judicial circuit shall be altered or changed at any session of the General Assembly next preceding the general election for said judges.

Sect. 15. From and after the first day of January, one thousand eight hundred and sixty-six, the circuit court of the County of St. Louis shall be composed of three judges, each of whom shall try causes separately, and all, or a majority of whom, shall constitute a court in bank, to decide questions of law, and to correct errors occurring in trials; and, from and after that day, there shall not be in said county any other court of record having civil jurisdiction, except a probate court and a county court. The additional judges of the circuit court of the County of St. Louis, authorized by this section, shall be appointed by the Governor, with the advice and consent of the Senate, and shall hold their offices until the next general election of judges of circuit courts, when the whole number of the judges of said court shall be elected. At the first session of said court, after the judges thereof who may be elected in the year one thousand eight hundred and sixty-eight, shall have assumed office, the said judges shall, by lot, determine the duration of their several terms of office, which shall be, respectively, two, four, and six years; and shall certify the result to the Secretary of State. At the general election every two years, after the election in that year, one judge of said court shall be elected, to hold office for the term of six years from the first Monday of January next ensuing. The General Assembly shall have power to increase the number of the judges of said court, from time to time, as the public interest may require. Any additional judges authorized shall hold office for the term of six years, and be elected at a general election, and enter upon their office on the first Monday of January next ensuing.

Sect. 16. The provisions contained in this article requiring an election to be held to fill a vacancy in the office of judges of the supreme and circuit courts, shall have relation to vacancies occurring after the year one thousand eight hundred and sixty-eight, up to which time any such vacancy shall be filled by appointment by the Governor.

Sect. 17. If there be a vacancy in the office of judge of any circuit, or if he be sick, absent, or from any cause unable to hold any term of court of any county of his circuit, such term of court may be held by a judge of any other circuit; and at the request of the judge of any circuit, any term of court in his circuit may be held by the judge of any other circuit.

Sect. 18. No person shall be elected or appointed a judge of the supreme court, nor of a circuit court, before he shall have attained to the age of thirty years, and have been a citizen of the United States five years, and a qualified voter of this State three years.

Sect. 19. Any judge of the supreme court, or the circuit court, may be removed from office, on the address of two-thirds of each house of the General Assembly to the Governor for that purpose; but each house shall state, on its respective journal, the cause for which it shall wish the removal of such judge, and give him notice thereof; and he shall have the right to be heard in his defense, in such manner as the General Assembly shall by law direct; but no judge shall be removed in this manner for any cause for which he might have been impeached.

Sect. 20. The judges of the supreme court and the judges of the circuit courts shall at stated times receive a compensation for their

services, to be fixed by law, which shall not be diminished during the period for which they were elected.

Sect. 21. The circuit court shall exercise a superintending control over all such inferior tribunals as the General Assembly may establish, and over justices of the peace in each county in their respective circuits.

Sect. 22. The supreme court and the district courts shall appoint their respective clerks. Clerks of all other courts of record shall be elected by the qualified voters of the county, at a general election, and shall hold office for the term of four years from and after the first Monday of January next ensuing, and until their successors are duly elected and qualified. The first election of such clerks after the adoption of this Constitution shall be at the general election, in the year one thousand eight hundred and sixty-six; any existing law of this State to the contrary notwithstanding.

Sect 23. Inferior tribunals, to be known as county courts, shall be established in each county for the transaction of all county business. In such courts, or in such other tribunals, inferior to the circuit courts, as the General Assembly may establish, shall be vested the jurisdiction of all matters appertaining to probate business, to granting letters testamentary and of administration, to settling the accounts of executors, administrators, and guardians, and to the appointment of guardians, and such other jurisdiction as may be conferred by law.

Sect. 24. No clerk of any court established by this Constitution, or by any law of this State, shall apply to his own use from the fees and emoluments of his office, a greater sum than two thousand five hundred dollars for each year of his official term, after paying out of such fees and emoluments such amounts for deputies and assistants in his office as the court may deem necessary and may allow; but all surplus of such fees and emoluments over that sum, after paying the amounts so allowed, shall be paid into the county treasury for the use of the county. The General Assembly shall pass such laws as may be necessary to carry into effect the provisions of this section.

Sect. 25. In each county there shall be appointed, or elected, as many justices of the peace as the public good may be thought to require. Their powers and duties, and their duration in office, shall be regulated by law.

Sect. 26. All writs and processes shall run, and all prosecutions shall be conducted, in the name of the "State of Missouri;" all writs shall be tested by the clerk of the court from which they shall be issued; and all indictments shall conclude "against the peace and dignity of the State."

ARTICLE VII.

IMPEACHMENTS.

Section 1. The Governor, Lieutenant-Governor, Secretary of State, State Auditor, State Treasurer, Attorney-General, and all judges of the courts, shall be liable to impeachment for any misdemeanor in office; but judgment, in such case, shall not extend further than re-

moval from office, and disqualification to hold any office of honor, trust or profit under this State.

Sect. 2. The House of Representatives shall have the sole power of impeachment. All impeachments shall be tried by the Senate; and when sitting for that purpose the Senators shall be on oath or affirmation to do justice according to law and evidence. When the Governor shall be tried, the presiding judge of the supreme court shall preside. No person shall be convicted without the concurrence of two-thirds of the Senators present.

ARTICLE VIII.

BANKS AND CORPORATIONS.

Section 1. No corporate body shall hereafter be created, renewed, or extended with the privilege of making, issuing, or putting in circulation any notes, bills, or other paper, or the paper of any other bank to circulate as money, and the General Assembly shall prohibit, by law, individuals and corporations from issuing bills, checks, tickets, promissory notes, or other paper to circulate as money.

Sect. 2. No law shall be passed reviving or re-enacting any act heretofore passed creating any private corporation, where such corporation shall not have been organized and commenced the transaction of its business within one year from the time such act took effect, or within such other time as may have been prescribed in such act for such organization and commencement of business.

Sect. 3. The General Assembly shall, at its first session, after this Constitution goes into effect, enact laws, enabling any of the existing banks of issue to reorganize as national banks under the act of Congress, and shall also provide for the sale of the stock owned by this State in the Bank of the State of Missouri, upon such terms and conditions as shall be by law established.

Sect. 4. Corporations may be formed under general laws, but shall not be created by special acts, except for municipal purposes. All general laws and special acts passed pursuant to this section may be altered, amended, or repealed.

Sect. 5. No municipal corporations, except cities, shall be created by special act; and no city shall be incorporated with less than five thousand permanent inhabitants, nor unless the people thereof, by a direct vote upon the question, shall have decided in favor of such incorporation.

Sect. 6. Dues from private corporations shall be secured by such means as may be prescribed by law; but in all cases each stockholder shall be individually liable, over and above the stock by him or her owned, and any amount unpaid thereon, in a further sum, at least equal in amount to such stock.

ARTICLE IX.

EDUCATION.

Section 1. A general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the General Assembly shall establish and maintain free schools, for the gratuitous instruction of all persons in this State between the ages of five and twenty-one years.

Sect. 2. Separate schools may be established for children of African descent. All funds provided for the support of public schools shall be appropriated in proportion to the number of children without regard to color.

Sect. 3. The supervision of public instruction shall be vested in a "Board of Education," whose powers and duties shall be prescribed by law. A Superintendent of Public Schools, who shall be the President of the Board, shall be elected by the qualified voters of the State. He shall possess the qualifications of a State Senator, and hold his office for the term of four years; and shall perform such duties and receive such compensation as may be prescribed by law. The Secretary of State and Attorney-General shall be ex-officio members, and, with the Superintendent, compose the Board of Education.

Sect. 4. The General Assembly shall also establish and maintain a State university, with departments for instruction in teaching, in agriculture, and in natural science, as soon as the public school fund will permit.

Sect. 5. The proceeds of all lands that have been, or hereafter may be, granted by the United States to this State, and not otherwise appropriated by this State or the United States; also, all moneys, stocks, bonds, lands, and other property now belonging to any fund for purposes of education; also, the net proceeds of all sales of land and other property and effects that may accrue to the State by escheat, or from sales of estrays, or from unclaimed dividends, or distributive shares of the estates of deceased persons, or from fines, penalties, and forfeitures; also, any proceeds of the sales of the public lands which may have been, or hereafter may be, paid over to this State (if Congress will consent to such appropriation); also, all other grants, gifts, or devises that have been, or hereafter may be, made to this State, and not otherwise appropriated by the terms of the grant, gift, or devise, shall be securely invested and sacredly preserved as a "Public School Fund," the annual income of which fund, together with so much of the ordinary revenue of the State as may be necessary, shall be faithfully appropriated for establishing and maintaining the free schools and the university in this article provided for, and for no other uses or purposes whatsoever.

Sect. 6. No part of the public school fund shall ever be invested in the stock or bonds, or other obligations of any State, or of any county, city, town, or corporation. The stock of the Bank of the State of Missouri, now held for school purposes, and all other stocks belonging to any school or university fund, shall be sold in such man-

ner and at such time as the General Assembly shall prescribe; and the proceeds thereof, and the proceeds of the sales of any lands or other property which now belong, or may hereafter belong, to said school fund, may be invested in the bonds of the United States. All county school funds shall be loaned upon good and sufficient unincumbered real estate security, with personal security in addition thereto.

Sect. 7. No township or school district shall receive any portion of the public school fund, unless a free school shall have been kept therein for not less than three months during the year for which distribution thereof is made. The General Assembly shall have power to require, by law, that every child, of sufficient mental and physical ability, shall attend the public schools during the period between the ages of five and eighteen years, for a term equivalent to sixteen months (unless educated by other means).

Sect. 8. In case the public school fund shall be insufficient to sustain a free school at least four months in every year in each school district in this State, the General Assembly may provide, by law, for the raising of such deficiency, by levying a tax on all the taxable property in each county, township, or school district, as they may deem proper.

Sect. 9. The General Assembly shall, as far as it can be done without infringing upon vested rights, reduce all lands, moneys, and other property, used or held for school purposes, in the various counties of this State, into the "Public School Fund" herein provided for; and in making distribution of the annual income of said fund, shall take into consideration the amount of any county or city funds appropriated for common school purposes, and make such distribution as will equalize the amount appropriated for common schools throughout the State.

ARTICLE X.

MILITIA.

Section 1. All able-bodied male inhabitants of this State, between the ages of eighteen and forty-five years, who are citizens of the United States, or have declared their intention to become citizens of the United States, shall be liable to military duty in the militia of this State; and there shall be no exemption from such duty except of such persons as the General Assembly may, by law, exempt.

Sect. 2. The General Assembly shall, by law, provide for the organization of the militia, and for the paying of the same when called into actual service; but there shall be no officer above the grade of brigadier-general, nor shall there be more than two officers of that grade.

Sect. 3. Each company and regiment shall elect its own company and regimental officers; but if any company or regiment shall neglect to elect such officers within the time prescribed by law, or by the order of the Governor, they may be appointed by the Governor.

ARTICLE XI.

MISCELLANEOUS PROVISIONS.

Section 1. The General Assembly of this State shall never interfere with the primary disposal of the soil by the United States, nor with any regulation which Congress may find necessary for securing the title in such soil to the *bona fide* purchasers. No tax shall be imposed on lands the property of the United States; nor shall lands belonging to persons residing out of the limits of this State ever be taxed at a higher rate than the lands belonging to persons residing within the State.

Sect. 2. The State shall have concurrent jurisdiction on the River Mississippi, and on every other river bordering on the said State, so far as the said river shall form a common boundary to this State and any other State which may be bounded thereby; and the said River Mississippi and the navigable rivers and waters leading into the same, whether bordering on or within this State, shall be common highways, and forever free to the citizens of this State and of the United States, without any tax, duty, impost, or toll therefor imposed by the State.

Sect. 3. All statute laws of this State, now in force, not inconsistent with this Constitution, shall continue in force until they shall expire by their own limitation, or be amended or repealed by the General Assembly; and all writs, prosecutions, actions, and causes of action, except as herein otherwise provided, shall continue; and all indictments which shall have been found, or may hereafter be found, for any crime or offense committed before this Constitution takes effect, may be proceeded upon as if no change had taken place, except as hereinafter specified.

Sect. 4. No person shall be prosecuted in any civil action or criminal proceeding, for or on account of any act by him done, performed, or executed, after the first day of January, one thousand eight hundred and sixty-one, by virtue of military authority vested in him by the Government of the United States, or that of this State, to do such act, or in pursuance of orders received by him from any person vested with such authority; and if any action or proceeding shall have heretofore been, or shall hereafter be, instituted against any person for the doing of any such act, the defendant may plead this section in bar thereof.

Sect. 5. No person who shall hereafter fight a duel, or assist in the same as a second, or send, accept, or knowingly carry, a challenge therefor, or agree to go out of this State to fight a duel, shall hold any office in this State.

Sect. 6. No money shall be drawn from the Treasury but in consequence of appropriations made by law; and an accurate account of the receipts and expenditures of the public money shall be annually published.

Sect. 7. No person holding an office of profit, under the United States, shall, during his continuance in such office, hold any office of profit under this State.

Sect. 8. In the absence of any contrary provision, all officers now or hereafter elected or appointed, shall hold office during their official term, and until their successors shall be duly elected, or appointed, and qualified.

Sect. 9. The General Assembly shall have power to repeal or modify all ordinances adopted by any previous convention.

Sect. 10. The seat of Government of this State shall remain at the City of Jefferson.

Sect. 11. No person emancipated by the "*Ordinance abolishing slavery in Missouri*," adopted on the eleventh day of January, one thousand eight hundred and sixty-five, shall, by any county court or other authority, be apprenticed, or bound for any service, except in pursuance of laws made specially applicable to the persons so emancipated.

Sect. 12. The General Assembly shall provide, by law, for the indictment and trial of persons charged with the commission of any felony, in any county other than that in which the offense was committed, whenever, owing to prejudice, or any other cause, an impartial grand or petit jury cannot be impanneled in the county in which such offense was committed.

Sect. 13. The credit of the State shall not be given or loaned in aid of any person, association, or corporation; nor shall the State hereafter become a stockholder in any corporation or association, except for the purpose of securing loans heretofore extended to certain railroad corporations by the State.

Sect. 14. The General Assembly shall not authorize any county, city, or town to become a stockholder in or to loan its credit to any company, association, or corporation, unless two-thirds of the qualified voters of such county, city, or town, at a regular or special election to be held therein, shall assent thereto.

Sect. 15. The General Assembly shall have no power, for any purpose whatever, to release the lien held by the State upon any railroad.

Sect. 16. No property, real or personal, shall be exempt from taxation, except such as may be used exclusively for public schools, and such as may belong to the United States, to this State, to counties or to municipal corporations within this State.

ARTICLE XII.

MODE OF AMENDING AND REVISING THE CONSTITUTION.

Section 1. This Constitution may be amended and revised in pursuance of the provisions of this article.

Sect. 2. The General Assembly, at any time, may propose such amendments to this Constitution as a majority of the members elected to each house shall deem expedient; and the vote thereon shall be taken by yeas and nays, and entered in full on the journals. And the proposed amendments shall be published with the laws of that session, and also shall be published weekly in two newspapers, if such there be, within each Congressional district in the State, for four months next preceding the general election then next ensuing. The proposed amendments shall be submitted to a vote of the people, each amendment separately, at the next general election thereafter, in such manner as the General Assembly may provide. And if a majority of the qualified voters of the State, voting for and against any one of said amendments, shall vote for such amendment, the same shall be deemed

and taken to have been ratified by the people, and shall be valid and binding to all intents and purposes as a part of this Constitution.

Sect. 3. The General Assembly may, at any time, authorize by law, a vote of the people to be taken upon the question whether a Convention shall be held for the purpose of revising and amending the Constitution of the State; and if at such election a majority of the votes on the question be in favor of a Convention, the Governor shall issue writs to the sheriffs of the different counties, ordering the election of delegates to such a Convention, on a day within three months after that on which the said question shall have been voted on. At such election each Senatorial District shall elect two delegates for each Senator to which it may then be entitled in the General Assembly, and every such delegate shall have the qualifications of a Senator. The election shall be conducted in conformity with the laws regulating the election of Senators. The delegates so selected shall meet at such time and place as may be provided by law, and organize themselves into a Convention, and proceed to revise and amend the Constitution; and the Constitution, when so revised and amended, shall, on a day to be therein fixed, not less than sixty nor more than ninety days after that on which it shall have been adopted by the Convention, be submitted to a vote of the people for and against it, at an election to be held for that purpose only; and if a majority of all the votes given be in favor of such Constitution, it shall, at the end of thirty days after such election, become the Constitution of this State. The result of such election shall be made known by proclamation by the Governor. The General Assembly shall have no power, otherwise than as in this section specified, to authorize a Convention for revising and amending the Constitution.

ARTICLE XIII.

PROVISIONS FOR PUTTING THIS CONSTITUTION INTO FORCE.

And we do further ordain as follows:

Section 1. The preceding parts of this instrument shall not take effect unless this Constitution be adopted by the people, at the election to be held as hereinafter directed; but the provisions of this article shall be in force from the day of the adoption of this Constitution by the representatives of the people in this Convention assembled.

Sect. 2. For the purpose of ascertaining the sense of the people in regard to the adoption or rejection of this Constitution, the same shall be summitted to the qualified voters of the State, at an election to be held on the sixth day of June, one thousand eight hundred and sixty-five, at the several election precincts in this State, and elsewhere, as hereinafter provided. On that day, or on any day not more than fifteen days prior thereto, such qualified voters of this State as shall then be absent from the places of their residence, by reason of their being in the military service of the United States or of this State, whether they then be in or out of this State, shall be entitled to vote on the adoption or rejection of this Constitution. For that purpose a poll shall be opened in each Missouri regiment or company in such service, at the quarters of the commanding officer thereof; and the

voters of this State belonging to such regiment or company, and any others belonging to any other such regiment or company, and who may be present, may vote at such poll. Any one or two commissioned officers of such regiment or company, who may be present at the opening of the polls, shall act as judge or judges of the election; and if no such officer be present, then the voters of such regiment or company present, shall elect two of the voters present to act as such judges. Every such judge shall, before any votes are received, take an oath or affirmation that he will honestly and faithfully perform the duties of judge, and make proper return of the votes given at such election; and such oath the judges may administer to each other. In any election held in a regiment or company, the polls shall be opened at eight o'clock A.M., and closed at six o'clock P.M.

Sect. 3. The election provided for in the next preceding section shall be by ballot. Those ballots in favor of the Constitution shall have written or printed thereon the words "New Constitution—Yes;" those against the Constitution shall have written or printed thereon the words "New Constitution—No."

Sect. 4. The said election shall be conducted, and the returns thereof made to the clerks of the several county courts, and by them immediately certified to the Secretary of State, as provided by law in the case of elections of State officers; and where an election shall be held in a regiment or company, the returns thereof, with the poll books, shall be certified to the Secretary of State, and may be transmitted by mail, or by any messenger to whom the judges of the election may intrust the same for that purpose.

Sect. 5. Any qualified voter of this State, within the State, who, on the day of said election, shall be absent from the place of his residence, may vote at any place of voting, upon satisfying the judges that he is a qualified voter, and being sworn by them that he has not voted, and will not vote, in said election at any other election precinct.

Sect. 6. At said election, no person shall be allowed to vote who would not be a qualified voter according to the terms of this Constitution, if the second article thereof were then in force. The judges of election shall administer to every person offering to vote, in lieu of the oath now required to be taken by voters under the ordinance of June 10th, 1862, the following oath, to wit: "I, A. B., do solemnly swear that I am well acquainted with the terms of the third section of the second article of the Constitution of the State of Missouri, adopted by the Convention which assembled in the City of St. Louis on the 6th day of January, eighteen hundred and sixty-five, and have carefully considered the same; that I have never directly or indirectly done any of the acts in said section specified; that I have always been truly and loyally on the side of the United States against all enemies thereof, foreign and domestic; that I will bear true faith and allegiance to the United States, and will support the Constitution and laws thereof as the supreme law of the land, any law or ordinance of any State to the contrary notwithstanding; that I will, to the best of my ability, protect and defend the Union of the United States, and not allow the same to be broken up and dissolved, or the government thereof to be destroyed or overthrown under any circumstances, if in

my power to prevent it; and that I make this oath without any mental reservation or evasion, and hold it to be binding on me;" and if any such person decline to take said oath, he shall not be permitted to vote at said election; but the taking thereof shall not be deemed conclusive evidence of the right of such person to vote, but such right may be disputed and disproved. Any person who shall falsely take, or, having taken, shall thereafter willfully violate the oath prescribed in this section, shall, upon conviction thereof, by any court of competent jurisdiction, be adjudged guilty of the crime of perjury, and shall be punished therefor in accordance with existing law.

Sect. 7. On the first day of July next ensuing said election, the Secretary of the State shall, in the presence of the Governor, the Attorney-General, or the State Auditor, proceed to examine and cast up the returns of the votes taken at said election, and certified to him, including those of persons in the military service; and if it shall appear that a majority of all the votes cast at such election were in favor of the Constitution, the Governor shall issue his proclamation, stating that fact, and this Constitution shall, on the 4th day of said month of July, be the Constitution of the State of Missouri.

Sect. 8. The officer now known as the "Auditor of Public Accounts," shall hereafter be styled State Auditor.

Sect. 9. The office of Register of Lands shall continue until the General Assembly shall abolish the same.

Done by the Representatives of the people of the State of Missouri, in convention assembled, at the City of St. Louis, on the 8th day of April, in the year of our Lord one thousand eight hundred and sixty-five, and of the independence of the United States the eighty-ninth.

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Attest:

AMOS P. FOSTER, *Secretary.*
THOS. PROCTOR, *Ass't. Sec'y.*

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